UMASS/AMHERST
312066 0333 3295 6

LIBRARY
OF THE

MASSACHUSETTS
AGRICULTURAL
COLLEGE

SOURCE.

THE

British Bee Journal,

AND BEE-KEEPERS' ADVISER.

EDITED BY

THOS. WM. COWAN, F.G.S., F.L.S., F.R.M.S., &c., AND W. BROUGHTON CARR.

VOLUME XXVII.

JANUARY–DECEMBER, 1899.

PUBLISHED BY

SIMPKIN, MARSHALL, HAMILTON, KENT, & CO., LIMITED,

23, PATERNOSTER ROW, E.C.

LIBRARY
UNIVERSITY OF
MASSACHUSETTS
AMHERST, MASS.

LONDON:
PRINTED BY LOVE AND WYMAN, LIMITED,
GREAT QUEEN STREET, W.C.

INDEX

EDITORIALS:—Volume XXVII. 1; Selling Honey, 21, 31, 41; Errata, 41, 276, 418; Drawing Hives to Scale, 41; "Royal" Show, 131; Replies by Telegraph, 151, 162; Building Up Stocks in Spring, 161; Renewing Combs in Brood-chamber, 161; Swarming and Its Prevention, 162; Celluloid for Queen-excluders, 162; Early Shows, 171; Swarming and Surplus Storing, 191; Spraying Fruit Trees in Spring, 191; Working for Surplus Honey, 199; Surplus Chambers for Honey-comb, 209; The Royal Agricultural Society, 239; Shows to Come, 249; Bee and Honey Shows at Hull, 259; The Season's Honey Crop, 279, 289; Crystallisation of Beeswax, 446, 500; Current Prices of Honey, 289; Bath Bee Case, 299, 329, 339; Honey-producing Heather, 319; The Groceries Exhibition, 349; Creating a Honey Market, 347; Final Honey Shows for 1899, 359; Weather and Its Warnings, 379; The Past Season, 379; Preparing for Winter, 379; Building Up Stocks from Driven Bees, 380; BEE JOURNAL Advertisements, 380; Honey and Honey Products at Manchester, 389; Dairy Show, 419; Exhibiting and Exhibitors, 439; Lace Paper Edging, 439; Show Jars for Extracted Honey, 439; Judging Comb-honey, 440; Duplicate Awards, 440; Colour of Extracted Honey, 440; Late Flowering Lime, 449; Bee-keepers and the War, 479; "The Absent-Minded Beggar," 489; Buying and Selling Honey, 499; A Year closing in Shadow, 509

ASSOCIATIONS, B.K.:—British, 11, 51, 111, 121, 141, 181, 229, 269, 359, 399, 419, 440, 479; Berks, 309; Bristol, Som., and South Glos., 51, 309; Cambs and Isle of Ely, 310; Cheshire, 21, 350; Derbyshire, 70, 369; Devon, 71, 339; Essex, 71, 230; Goole and District, 351; Hereford, 369; Hunts, 215; Irish, 41, 163, 426; Kent and Sussex, 41; Lancashire and Cheshire, 11, 61, 81; Lancashire, 200, 361; Leicestershire, 91, 260, 320; Lincolnshire, 112, 279, 309, 361; Midlothian, 389; Newport and Monmouth, 113; Notts, 82, 260, 290; Northumberland and Durham, 182, 409; Northants, 321; Oxfordshire, 103; Roxburgh, N.B., 409; Shropshire, 339; South of Scotland, 61, 331; Staffordshire, 162, 330; Surrey, 181, 329; Upper Clydesdale, N.B., 369; Warwickshire, 112; Yetminster and District, 369.

Absent-minded beggar, 489, 508

Associations: Helping Members of, 90, 94; Membership of, 287; Joining, 50

Association for Beds., 227

A.B.C. of Bee-culture, 488

Abnormal Egg-laying, 211

Allowing Bees to transfer themselves, 78, 190, 241, 256, 267, 275, 276, 307, 474

Ancient Bee-lore, 116

Apiary: Neatness in the, 19; in the South Tyrol, 340; Location for, 438, 461

Apiaries, House, 375

Are Bees a Nuisance? 100, 456, 471

Apicultural Notes, 52

Appliance Makers, a Hint to, 176

Appliances, Packing, 222

Arctic Bee-hive, an, 194

Artificial Swarming, 168, 226; in May, 202

Aspect for Hives, 301

Australian Honey Yields, 502

Bath "Bee Case," the, 299, 332, 339, 350, 362, 370, 399, 438

Bee-County, Essex as a, 278, 306

Bee-keepers' Exchange, 465

Bee-keepers: Good advice to, 8; Books for, 486; Badges for, 324; Advising would-be, 50, 60; At Cologne, 410; Associations and selling honey, 165

Bee-keeper, Another Oppressed, 37; In the World-the most Extensive, 445

BEE-KEEPING: as a Hobby, 38; Address on, 468; for Ladies, 56; and Elementary Schools, 472; as a Profession, 417; at a Conversazione, 46; Beginning, 454; Books on, 458; in South Africa, 52; in Co. Donegal, 460; in Ireland, 97, 271; in London, 165; in Shropshire, 501; the Riviera, 222, 240, 255; Instruction in, 382; Lectures on, 408; Near towns, 134; Progress in, 245; Profits of, 350; Starting, 110, 140, 277, 397; Suitable Location for, 170; The Salient Points of, 402

Bee Anatomy, 16

Bee-Candy: Making, 12; Sugar for, 30; for Feeding, 52

Bee-District, West Norwood as a, 287, 297

Bee Doings for 1899, My, 400

Bee Experience, A Peculiar, 135

Bee Enemy (The Death's head moth), 218

Bee-Farm, Starting a, 385

BEE-FOOD: Granulated Sections as, 40; Honey as, 40; Medicated, 59; Sterilised Honey for, 84; Honey as, 88, 388; Unrefined Cane Sugar for, 347; Unripe Honey as, 377; Old Honey as, 170; Giving Frames of Honey in Spring as, 189; Re-medicating, 190; Honey from Diseased Hives for, 69; Autumn, 407

Bee-Furniture, Packing, 176, 254

Bee-Garden Pictures, 120; and the "Family," 63

Bee-Houses, 24, 29

Bee-Lore, 46, 492

BEE-NOMENCLATURE, 208, 478 492, 513

Bee Notes from Essex, 500

Bee-Parasites, 88, 126, 153, 164, 173, 186, 211, 227, 357, 376, 387, 396, 405, 412

Bee Pasturage, 341

Bee Plants, 277, 304, 312, 483; Growing Sainfoin for, 366

Bee-Proof Thread, 56, 64

Bee-School, A Swiss, 16; Season, the Coming, 127

Bee Superstitions, 106

Bee Tent, Netting for, 287

Bee Tree (Tilia Petiolaris), A Valuable, 361, 372, 382

Bee Work in '98, Some of my, 12; for the Week, 354

BEES: and Cricket, 15; Red Clover, 86; Laundresses, 95, 116; Horses, 246, 267; Sugar Refineries, 286; Valerian, 271; Jam Factories, 364; Arsenic, 386; Poultry, 485; or Honey, 497

Bees: Annoying Neighbours, 307; a Nuisance? Are, 100, 456, 471; at the Whitechapel Museum, 472; Building in the Open, 15, 494; by Post, 448; Buying Italian, 317; and Brood Cast Out, 180, 206, 227, 428; Controlling Sex in, 202, 230; Drowned through High Tide, 7; Dragged out and Killed 78; Dying, 100, 140, 238; Disappearing from Hive, 119; Deserting Stores, 246; Dying in Spring 327; Damaged in Transit, 408; Drunken, 427, 437; from Cumberland to London, Bringing, 120; When and How they Feed, 129; Distance they Fly in Search of Food, 168; Keeping them Good Natured, 186; Getting Behind Dummy, 267; Hybrid, 287, 324; in Londonderry, 34; in Skep, Short of Food, 444; in Australia, 73; in Manufacturing Districts, 168; in Kent, 304; in Hyde Park, 488; in house roof, 335; in church clock, 346; in the Isle of Man, 354; in Perthshire, 371; in Co. Kilkenny, 387; in the Country, Among, 148; in Sussex, 425; in South Africa, 476; in Winter, Confining, 486; Moving, 10, 34, 38, 50, 90, 119, 129, 140, 377, 378; Pedigree, 78; Perishing in February, 89; Planting for, 120; Pure Cyprian, 253; Races of, 50, 398, 418, 427, 468; Refusing Foundation, 170; Refusing Syrup Food, 397; Summer Management of, 75; Short of Stores, 78; Starving, 78; Salt for, 147; Selling, 307; Storing in Hive Roof, 315; Superseding Old Queen, 336; Tits and, 35, 287; Tunisian, 90; allowed to transfer themselves from Skeps to Frame Hives, 78, 190, 247, 256, 267, 275, 276, 307, 474; to Carry Unsealed Honey into Brood Nest, Inducing, 378; Utilising Condemned, 345, 357; Unable to Fly, 190; Variation in, 89; Vicious, 307; Varieties of 347, 367, 458; with Furniture, Moving, 377; Water Fountain for 127

Bee-Shows: Abington House, 360; Blankney, 309; Bradford Abbas, 360; Bildeston, 369; Bridgnorth, 370; Cambridge, 310; Croydon, 329; Castle Douglas, 381; Derby, 369; Dumfries, 381; Exeter, 339; Edinburgh, 389; Farnham, 459; Goole, 351: Helsby, Cheshire, 330; Horsham, 351; Hereford, 369; Hull, 289; Jedburgh, 409; Knowle, 309; Leicester, 260, 320; Ludlow, 470; Louth, 277; Liverpool, 320; Mansfield, 260; Marlow, 321; Manchester, 389; Morecambe, 361; Northampton, 321; Neston, Wilts, 330; Northwich, 350; Newcastle, 409; Pembury, 310; Shrewsbury, 339; Southwell, 290; St. Albans, 449; Windsor, 229, 309.

Bee-Show in South Africa, 213

"Bee-Shows to Come," 100, and weekly to page 438

Bee-tree, a Convenient, 501

Beginners' Troubles, 9, 77; Queries, 9, 227, 335, 386; Ideas, 402

Beginner, Some Reflections by a, 26, 35

Bell-Glasses, Home-made, 257

Brice, H. W.:—Investigation into the Nature of Foul

Brood, 113, 122, 131, 142, 157, 167, 178; Foul Brood Apparatus, 114; Media and their Uses, 115
British Association, 1899—Dover Meeting, 390
Brood-Nests, Enlarging, 6
Brood-Combs filled with Honey, 315
Buying and Selling Honey, 499

Candy Making, 12, 120, 448; Flour, 120; Sugar for, 30
Cane Sugar, Pure, 468
Carniolian Experiences, 292
Carbolic Cloths, 116
Celluloid Quilts, 43, 194; *v.* Glass, 44; for Hive Roofs, 80; for Queen Excluders, 162; Quilts and Excluders, 201, 213
Chapman Honey-Plant, Free Seeds of, 167, 180 187, 355
Chelifer Candroides, 165
Colour as an Enticement to Bees, 264
Colour of Surplus Honey, 406
Combs in Brood Chamber, Renewing, 161; on which Bees Have Died, Using, 169; Containing Hard Pollen, 177; from Discarded Hives, Using, 177; Built on "Sagged" Foundation, 198; Pollen-choked, 198; for Extracting, Uncapping, 233; Inspecting, 317; Crooked, 405; from Diseased Stocks for Foundation, Making, 30
Comb Foundation, 6; Using Old, 80; Fixing, 400; by Post, Sending, 418; Smashed in Post, 438
Comb-honey, Producing, 271, 290, 311; Handy when Wanted, 501
Condemned Bees, Destroying, 377
Confining Bees when Moving 100 yards, 507
Congress of Bee-keepers at Cologne, 410
Consanguinity, 218
Conversazione of B.B.K.A., 121, 399, 420, 429, 439
Correction, A, 500
Cowan, T. W., on Dealing with Foul Brood, 251; on Spores and Bacilli, 251; on Germicides and Antiseptics, 251; on Crystallisation of Beeswax, 440, 500
Creosote, 287
Criticising Editorial Replies, 294
Crystallisation of Beeswax, 390, 440, 471, 500
Curious Result from Scraping Hives, 128

Dairy Show, 399, 419, 424, 434, 450; Dark Honey at the, 452; Exhibits at the, 436; An Exhibitor's Impressions Regarding the, 436
Dealers and their Customers, 30, 277; Grievances, 294
December Notes from Yorkshire, 491
Defaulting Honey Buyers, 491, 502
"Dickell" Theory, the, 127, 147, 244, 412
Diagrams for School Use, 198
Dilatory Dealers, 267
Diseased Stocks, Dealing with, 257
Disease in Hives, Suspected, 265
Diseased Bees, Selling, 267
Dishonesty, a Premium on, 434
Disqualifying Exhibits, 198, 460
Doctors Differ, 3, 12
Doolittle, G. M., on: Queen-rearing, 39, 59, 67; What Size of Frames to Use, 39; Good Management, 99; Crooked Sections—Combs, 405; Difference in Colonies, 405; Temperature for Brood-rearing, 414; Bee Life, How Long is It Ordinarily, 426; Caring for Comb Honey, 455; Use of Queen-excluders, 477; Hive Ventilation during Winter, 488
Dorset as a Honey-county, 448
Doubling and Storifying 205
Driving Bees, 104, 140, 204, 282, 284, 312; in March, 104; Novel Method of, 404
Driven Bees, Building up Stocks from, 107; Feeding, 110; Deserting Skeps, 224; Taking Wing, 277; Taking Wing after Hiving, 296; on Foundation in October, 417
Swarm Deserting Hive, 327
Drones, Superfluous, 246
Dublin Society, Royal, 489
Duplicate Awards, 440

Earliest Flowering Plants, 152, 214
Echoes from the Hives, 9, 18, 28, 47, 79, 109, 130, 139, 149, 176, 189, 197, 206, 216, 225, 245, 275, 285, 316, 344, 366, 376, 386, 415, 438, 506
Editorial Replies, Criticising, 294
Embedder, Lamp for Heating, 186
Excluder Zinc below Sections, 59
Exhibits Disqualify? Will Labelling, 198; at Shows, Selling, 327
Experts' Certificates, 34, 287, 408, 478
Expert's Experience, 212
Extractors and wide Frames, 160
Extractor, Solar, 186, 324, 332
Extracting from Brood combs, 247

False Alarm, a, 238
Feeding Beforehand Necessary? Is, 11; Spring, 110, 508; Bees, Dark Honey for, 316; for Winter, 327, 508; Stimulative, 366; Bees in November, 470
Feeders, Rapid, 407; Bottles as Rapid, 398
Feeder, an Effective Outside, 402; A Home-made Rapid, 435
Feeding Bees in Winter and Spring, 508
"Find" of Honey, Another, 512
Floods in Essex, 7
Flour as a Pacifier, 274
Flour Candy Making, 120
Forage for Bees, Late, 412
Foundation, Wiring, 33, 46, 66, 186; Home-made, 365, 408
Foul Brood, Curing, 36, 44, 113, 236; Dealing with, 107, 180, 265, 305, 332, 367, 377, 407, 451, 458; Suspected, 120, 205, 327, 408, 418; Sulphur Fumes and, 170; Neighbour's Bees and 205; Germs, 209, 251, 321; Endeavouring to Cure, 236; Curious Case of, 244; Avoiding, 247; Spores and Bacilli, Germicides and Antiseptics, 215; Spread, how, 336; and Foundation, 30, 342, 362, 366
Frames to Use, what Size of, 39, 40; Bee-proof Thread for "Wiring," 43, 53; for Working Sections, Size of, 77; Hang in Hives? How Should, 149; Changing to Standard, 226; Wiring, 385, 402
Frame Hives, Fixed Combs in, 445
Fruit Trees, Spraying, 183, 192
Fuel for Smokers, 80

Good Management, 172
Granulated Honey, 367; Sections as Bee Food, 40
Granulation of Honey, Early, 377
Groceries Exhibition, 20, 349, 362, 399
Grocery Trades' Exhibition at Manchester, 360
Guernsey as a Bee District, 277

"Hat," the, 2, 116, 141
Heat Wave, the, 344
Heather, Bees at the, 43; Bee Forage, 319; in the Isle of Man, 332; on the Mendips, 287; Preparing Bees for the, 3, 11, 12; Varieties of, 20, 317, 318
Honey, Working for, 151, 171, 176; for Showing, 386; Yield in 1899, 406; from Hampshire, 327
Hetherington, Captain J. E., 445
Hints to Buyers, 470
Hive Management by a Lady, 280
Hive: The W.B.C., 30; Plans of W.B.C., 30; to Use, What, 26, 35; Entrances, Different Colours, Painting, 120; Making, Boards for, 180; Robbed, 408; of Bees Stolen, 454; Stands, Benches for, 475; Ventilation During Winter, 487
Hives: Choosing Locality for, 39; Distance Apart for Placing, 496; Examining, 347; Earwigs in, 388; from Interference, Protecting, 98; Foul Combs in, 120; Giving Room in, 208; in Spring, Contracting, 107; Moving, 50; Moths in, 401; Non-swarming, 93; Observatory, 437; Painting, 87; Painting Insides of, 43; Single *v.* Double Walls for, 43; Size of, 80, 119; Ventilation of, 69
Homes of the Honey Bee, (see "Illustrations," Page VI.)
Honey as Bee-food, 69, 337; Adulteration and Analyses of, 479; "A Find" of, 106; Buckwheat, 33, 135; Buying, 491, 499, 502; "Contaminated" Honey, 459; Current Prices of, 384; Dew, 10, 17, 42; Extracted, 48, 439, 440; Extracting, 227; Extractors at Shows 272; Exhibiting Granulated, 307; Exhibiting, 277, 388; Food Value of, 479, 495; For Market, 48, 376; For Showing, Colour of, 468; For Use as Bee-Food, Old, 170; Fermenting, 169; From Brood-nest, Extracting, 208; From Infected Hives, 267; From Questionable Sources, 356; From a June Swarm, Over 200 lb. of, 395, 432; From a Farm-house, 396; From Brood-nest, Removing, 417; Flow, Sudden 234; Flow, Recording the, 341; Gathering in Kent, 216; Gathering, World's Records in, 452; Grading, 377; in Comb, 1,800 Years Old, 180; in Tins, Keeping, 468; in Stone Jars, 204; Ivy, 451, 461; Judging, 307, 327, 434, 450; Imports for 1898, total, 103; Imports, 20, 21, 61, 133, 148, 182, 230, 324, 361, 405, 449, 489; Imports for the Years 1891 to 1898, 103; Jars, Size and Shape of, 152; Jars, Glass, 485; Jars, 491; Jars, Reliable Screw-Caps on, 153; Label, a New, 153; Labels, County Association, 227; Liquifying, 238; Market, Creating a, 349; Preventing Granulation of, 418; Producing and Marketing, 244; Prices for, 286, 289, 359, 398, 424, 484; Producing Comb, 271, 290; Plants, Poppies as, 297; Quality of, 478; Reliquifying, 468; Ripened, 297; Ripening, 297, 307; Ripeners, 287; Ripener, a Good, 234; Record "Takes of," 411; Samples, 20, 30, 167, 169, 408, 448; Sales, 22, 32, 42; Selling, 21, 31, 32, 44, 152, 165, 173, 425, 490, 499; Selling Dark, 212; Season, the Coming, 235; Source of, 317, 388, 458; Specific Gravity of, 285: Shows, Supporting, 396; Strainer, Zinc for, 366; Storing, Extracted, 397, 428; Take for 1898, My, 56; Variations in Colour of, 327; Working for Comb and Extracted, 195
Honey-comb Designs, 227
Honey-bee in America, 467
Honey-combs Hidden for Fifty Years, 26, 33
Honey-bee 5,500 Years Ago, 147
Honey Yields, Australian, 502
Horticultural College, Swanley, 300
How Bees Get Drunk, 427
How to Paint Hives Well as Home Work, 87
Humble-bees' Nests, Taking, 334
Hybrid Carniolan Bees, Raising, 130

Immature Brood Cast Out, 238
Increase or Surplus First? 205
Increase, Controlling, 266
Insects and Flowers, 264, 281, 291, 294, 310
Insect Nomenclature, 345, 418
Influence of Wax Crystallisation on Formation of Cells of Bees, 390, 440
International Show and Honey Fair, 468

Judging Honey, 307, 327, 440, 450
Jars for Showing Honey, Size of, 318; at Shows, Honey, 450; in Trophy Class, Size of, 450, 459; Size and Shape of, 152; Reliable Screw-Caps on, 153

LOVEDAY, WM.: *His Contributions on:—*
Retrospective, 4
Size of Brood-nest as Affecting Honey Yield, 20
Bees in Trees, 26
Honey-comb Hid Half a Century, 26, 66
A Mixed Sale, 47
Faulty Honey Jars, 74
March Notes, 83
Bees and Laundresses, 116
Reliable Screw-Caps for Jars, 146
Do Fowls Eat Bees? 146
The "Dickel" Theory, 187
Weather, 151
Bees and Tits, 151
Replies by Wire, 164
Keeping Bees on an Allotment, 164
Bounties on Honey, 164
Wax Moth, 164
Working for Heather Honey, 171
Is Feeding Fair? 171
A Dealer's Grievance, 294
Clipping Queens' Wings, 192
Mr. Wells' Annual Report, 192

Making Hive Roofs Water-tight, 192
Advertising Spare Queens for Sale, 193
Hornchurch as a Bee District, 306
Removing Bees from Roofs, 424
Water Troughs for Bees, 146
Notes on the Dairy Show and on Shows in General, 450
Queen Excluders, 484
Lady Bee-keeper's Experience, 36
Lady Bee-keeper's Views of Hive Management, 280
Lace Paper Edging, 439, 442, 450, 469, 472
Leyton as a Bee District, 120, 130
Leaf Cutting Bee, 267
Library Table, Our, 447, 457, 467
Lime Bloom in August, 361, 372, 382
Lime, Late Flowering (Tilia Petiolaris), 325, 403, 412, 418, 448, 449, 452
Locating an Apiary, 514

Markets, Our, 50
Methods of Management, 427
METEROLOGICAL, 7, *et passim.*
Meteorological—A Correction, 386
Mixed Sale, a, 47
Moorland Harvest, 220
Moors, Preparing for the, 234
Moon and the Weather, 14
Moths about Hives, 238
Mounting Objects for Microscopes, 110

Naphthol Beta, 80, 130
Naphthaline in Balls, 398
Naturalisation of Bees on an Island, 425
Newsagents and B.B.J., 169
Non-swarming System, 18, 204
Novelties for 1899, 139, 208, 475
NOTES AND QUERIES, 14, 27, 492
Notes about Bees, Curious, 136
NOTES BY THE WAY: *By Wm. Woodley*:—
"Royal" Shows, 2
Foul Brood Statistics, 3
Registers for Hives, 3
Candy Making, 21
Honey Sales, 42
Honey Dew, 42
Packing Sections for Transit, 62
Sending Honey by Rail or Post, 133
County Bee Associations, 134
Reliable Caps for Honey Jars, 163
Buying Queens in April, 164
Packing Bee Furniture, 182
Bees and Water-troughs, 183
Dairy Show, 489
Foul Brood, 183
Swarm Catchers, 200
Current Prices of Honey, 261, 331
Shade for Hives, 262
Working Sections under Shallow Frames, 300
Moths and Bees, 332
Wasps, 332
Solar Extractor, 332
Market Prices, 394
Prices of Sections, 394
Dairy Show, 431
Packing Honey in Jars for Shows, 370
Record Honey "Takes," 449
Lace-paper Edging, 450
Honey Jars at Shows, 450
Bee "Management" and Exhibiting at Shows, 490
NOTES from Essex, 24, 500; Middlesex, 6; Shropshire, 6; South Bucks, 44, 93; Devon, 94, 147; Oxford, 103; Lakeland, 151; Hants, 474; the West, 194, 254, 311; Wychwood Forest, 404, 512; Yorkshire, 184, 491; Irish, 492
Notes, March, 83
Notes from a Bee-keepers' Diary, 136, 156, 166, 193
Nuclei, Buying, 218
Nucleus Colony to Queenless Stock, Adding, 347
Number of Hives for one to Manage, 130

Observatory Hives for Shows, 80
OBITUARY:—
Mr. Herbert J. Sands ("Lordswood"), 91, 101, 117, 124, 137, 154
Mrs. Sands, 326
"Old Sol," 509
Old-fashioned Bee-keeping, 511
Oppression, 67
Out-door Bee Demonstrations, 245
Outfit for Bee-Lectures or Home Use, 475

Packing-box Wanted, 64
Packing Bees for Transit, 236, 272, 512
Paris Exhibition, the, 75
Parthenogenesis *v.* "Dickel" Theory, 57, 72, 91
Pedigree Bees, 78
Photo-micrography, 198
Photos of Apiaries, 337
Phenyl, Soluble, 428
Pollen, Superabundant, 235
Pollen in Store Combs, 448
Press-cuttings, 366
Prices of Bee Journals 80
Profits of Bee-keeping, 513

Queen-cells, Cutting out, 59; Buying, 218; at end of August, Bees Building, 356
Queen-cell, Worker Bee in, 297
Queen-excluders, 238, 247, 286, 287, 477, 484
Queens Cast out Dead, 88, 160, 180, 247, 267, 297, 327, 307, 318; Ceasing to Lay, 315; Crippled, 227; Drone-breeding, 150, 159, 190; Do Bees know when Fertile? 235; Dead in Introducing Cage, 388; Lost in April, 226; Killed when Swarming, 216
Queen-introduction, 221, 235, 481, 494; Malformed, 274; Novel Way of Introducing, 221; Rearing, 39, 59, 89, 108, 287, 307; Singular Mishap to, 284; Unfertilised, 294; Vagaries, 304
Queen-mating, Selecting Drones for, 496
Queen-raising for Beginners, 307
Queen Wasps in December, 7; Wasp in Hive, 166
Queens: Age of, 59, 468; For Sale, 193; Failing, 202; Two in One Hive, 272, 397, 418; Renewing, 285; Introducing Valuable, 481
Queens, "Clipping," 19, 192
Queenless after Swarming, Hive, 365
Queenlessness, Suspected, 110, 397
Queries, Various, 18, 149, 324; Novices', 98; Beginners', 9, 227, 335, 386
Quilts (Celluloid), 13, 194

Rainfall in 1898, 28, 69; 1899, 59, 97, 138, 148, 189, 225, 275, 315, 344; Excessive, 305, 326, 464
Random Bee-jottings, 192
Remarkable "Find," 513
Remarkable Incident, 69
Removing Bees from Roofs, 384; Trees, 95; Chimneys, 225
Record "Takes" of Honey, 354, 458
Report, Mr. Quayle's, 22
Report of Congested Districts Board, Ireland, 97
Report for 1899, My, 460
Re-queening Hives, 277
Re-queening: Is it Advisable? 507; in Winter, 507
Robbing, Early, 20
Robbing and Suffocation, 236
Roofs, Zinc Covering for, 183; Weathertight, Making, 183, 192
"Rosemary," Still More, 4
"Royal" Show at Maidstone, 131, 141, 162, 219, 239, 249, 259
Royal Lancashire Agricultural Society, 320
Royal Counties Agricultural Society, 171
Royal Dublin Society, 489

Save us from our Friends, 269
Sad Misadventure to a Bee-keeper's Wife, 314
Salicylic Acid, 190
Season's Work, My Last, 204
Season in Pembrokeshire, 355; Yorkshire, 382; North Wales, 451
Sections and Swarms in May, 213; and Jars at Shows, 437; Avoiding Pollen in, 109; Bees Refusing to Enter, 244, 277; Below Shallow Frames, Working, 271, 290, 311; Crooked, 405; for Transit, Packing, 36, 92, 117; for Exhibition, 472; Glasses, Buying, 347, 355; Heather, 398; Lace-paper for, 432, 450, 469, 482; Marketing, 64; Price of, 461; Starting Bees in, 195; Storing, 397; Using Foundation in, 110; Unsealed Honey in, 428; Excluder Zinc Below, 59
Section-racks, Admitting Bees to, 149; Below Shallow Frames, 297; Home-made, 104; Propolising, 347; Removing Propolis from, 335; Size of, 428
Second Swarms, Preventing, 108, 196, 216,
Sending Live Bees for Examination, 347
Shallow Frames, Exhibiting, 337; in Surplus Boxes, Wide, 408; Working Sections Below, 290
Skeps, Increase from, 50; for Transit, Packing, 110; in Spring, Judging Strength of, 357; Moving Bees in, 50
Solar Wax-Extractor, 186, 324, 332
Soldering, Hints on, 374
Snowberry (*Symphoricarpus racemosa*), the, 442, 461, 474, 484, 494
Spraying Fruit Trees in Spring, 191, 192
Spores and Bacilli, Difference Between, 209
Stimulating Bees in March, 89; or Let Alone, 172
"Starters": Full sheets or, 428; Only for Swarms, Using, 190
Stings and Remedies, 34, 150, 160; Cure for Infantile, 88; Inoculation for, 216; Treatment of Wasps', 76, 149
Stocks by Dividing, Increasing, 90, 159, 256, 327
Stocks, Badly Provided, 458; Dwindling, 277, 287; in Spring, Building up, 161; on Other than Standard Frames, Buying, 246; Queenless, 117; Requeening Worthless, 215; Uniting, 100; Wintering Weak, 507; Worthless, 226
Stocked Hive Twenty-five Miles in Summer, Moving 255
"Surrey Folk-Lore," 492
Swarm, a Paying, 395, 404, 432, 442; a Truant, 495; Compensation for Loss of, 247; Deserting Hive, 418; Fighting, 297; in a Hedge, 15; in March, 128, 159; in September, 362; Preventing Loss of, 427
Swarm-carrier, a Safe, 23
Swarm-catcher, Coltman's Improved, 139; a Novel, 194; Catchers, 177, 200, 304, 367
Swarms and Surplus-room, 294; Clipping Queens to Prevent Loss of, 169; Destroyed, 265; Dealing With, 277; in Hollow Trees, 108; Managing, 205; Returning, 159; Returning Second, 37; Received on Frames, Hiving, 257, 267; Uniting Themselves, 236; Value of, 264
Swarming, 191, 295; Appliances, 99; Artificial, 168, 226; and Surplus Storing, 191; and its Prevention, 162; Preventing, 238, 335, 346; Troubles, 284
Surplus Honey of '99, First, 164; Working for, 199; Removing, 295, 325, 347; Storing, 191
Surplus-Chambers, Bees Refusing, 224
Surplus Room to Swarm, Giving, 327
Supers Drones in, 286; till End of Season, Leaving, 284
Super-Clearers, Using, 325, 345
Supering May Swarm, 307; Bees in August, 388

Teaching Bee-keeping in Schools, 504
Temperature, 34, 123, 148; Remarkable, February, 68, 88
Temperatures for January, 1898 and 1899, 47
Transferring Bees, 98, 287, 364; Beginner's Attempt at, 365; Combs Built Across Frames, 286; Bees and Combs from Skeps, 129, 277, 305, 317, 344, 355, 385, 397; from Boxes, 274; Frames and Bees to New Hive, 478; Combs to Standard Frames, 29, 197
Transferring Themselves from Skeps, Bees, 78, 190, 247, 256, 267, 275, 276, 307, 474
Trade Catalogues Received, 159, 207
Two Queens in one Hive, 272, 397, 418

Uniting, 4, 100, 274, 325, 347; are Weak Stocks worth? 238; First and Second Swarms, 244; Suspected Loss of Queen after, 416
Uncapping Knife, New, 232, 233
Uncapping Combs for Extracting, 233
Unsealed Combs in September 345
Useful Hints, 21, 31, 41, 161 191 199, 379, 469

Ventilating Hives, 301

Wax and Propolis, 428; Clarifying, 20; Crystallisation of, 390, 412, 440, 471; Extracting, 13, 22, 93; for Exhibition, 7, 438; in Marketable Cakes,

398; Mite, A, 173; Mr. Wells' Cake of, 254; Samples, 180
Wax-Extractor, Solar, 47, 73, 222, 234, 241, 264
Wax-Moth, 164, 196, 235; in Sawdust of Top Bars, 153; in Skeps, 308
Wax-Production, Working for 295
Wells, Mr. Geo., his Report for 1898, 144, 184, 192
"Wells Hives," 183, 194; in the Isle of Man, 22; should Supers be Occupied with both Stocks? 46; working, 63, 140; swarming, 63; single stocks in, 70; and System, 62, 169; Stocks Uniting of Themselves in, 485
Weather Records, 34
Weather Reports, 7, *et passim*
Where do Truant Swarms Go? 494
"Wild Bees," Our, by F. W. L. Sladen, 82, 96
"Wild Bees" in Walls, 224
Winter, Dead Bees Found outside Hives in, 37: Making Stores Safe for, 38; Stores, Bees in Skep Short of, 455; Leaving Lifts on in, 47; Feeding Up for, 344, 428; Confining Bees in, 486; Hive Ventilation in, 487
Winters, Old-fashioned, 37
Wintering, Preparing for, 29, 454, 461; Number of Frames for, 337; Weak Stocks, 507
Work for Winter Nights, 512
"You Keep Bees—We Do the Rest," 67, 75, 86
Yorkshire Agricultural Society, 289

ILLUSTRATIONS.

Vagrant Swarm, 15
Bird's Nest in Hive Roof, 35
Driving Bees, 54
After the Process, 54
Re-hiving Driven Bees, 55
Wiring Foundation in Frames, 63
Solar Wax-extractor, 74
Micro-photograph Apparatus, 114
Foul Brood, 123, 131, 132
Bee Parasite (Chelifer), 126
Foul-brood, Agar Tube-culture, 123
,, ,, Plate-culture, 123
,, Bacilli and Spores, 131, 132
Coltman's Swarm-catcher, 139
Honey-bee 5,500 years ago, 147
Corner in "Lordswood's" Garden, 155
Starting for the Moors, 175
Chapman Honey-plant, 188
Novel Swarm-catcher (Bees in Hat), 195
Queen-clipping Device, Queen-cage and Cell-protector, 206
Lee's Crystal Palace Super, 209
Stung! 303
Honey-producing Heathers, 319
Recording the Honey-flow, 341
Bee house, 375
German Bee-house on Wheels, 375
Wired Frame, 385
Crystallisation of Bees-wax, 390, 391
Fixing Comb-foundation, 401
The Late-flowering Lime, 403
Home-made Feeder, 435
Honey Exhibits at Dairy Show, 436
Lace-papered Section of Honey, 469
"Luvex Lantern," 475
Folding Screen for Lantern Slides, 475
A Truant Swarm, 495
An Old-fashioned Apiary, 511

PORTRAITS:—
"Lordswood" (Herbert J. Sands), 154
Captain J. E. Hetherington, 446

"HOMES OF THE HONEY BEE."
Apiary of Mr. F. Mower, St. Cross, Winchester, 5
,, Mr. G. Trice, Chilworth, Guildford, Surrey, 25
,, Mr. G. Franklin, Kenilworth, Warwickshire, 45
,, Mr. James Coates, Tiverton-on-Avon, Bath, 65
,, Mr. Edwin Wide, Hemyock, Devon, 85
,, Mr. John Yarwood, Sale Moor, Cheshire, 105
,, Mr. Herbert J. Sands (Lordswood), Rednal, Worcester, 125
,, Mr. W. Bartlett, West Lavington, Wilts, 145
,, Mr. James Marr, Duntocher, N.B., 174
,, Mr. W. J. Norman, Bridport, Dorset, 185
,, Mr. Frank B. Blackwell, Auckland, New Zealand 203
,, Miss M. L. Gayton, Much Hadham, Herts, 223
,, Messrs. Robson Bros., Lauder, Berwickshire, 243
,, Mr. Geo. Wells, Aylesford, Kent, 263
,, Mr. S. Head, Ivybridge, Devon, 273
,, Mrs. Allpress, Broughton, Huntingdon, 283
,, Mr. R. F. Alderton West Derby, Lancs., 293

"Homes of the Honey Bee" (*continued*):
,, Dairy (Ayrshire) B.K.A. Members' Hives, 302
,, Mr. Geo. Smith, Princes Risboro', Bucks, 313
,, Mr. John Bradley, Yockleton Salop, 323
,, Mr. C. Whiting, Hundon Clare, Suffolk, 333
,, Mr. G. C. Lyon, Hastings Sussex, 343
,, Mr. E. S. A. Gough, Congresbury, Bristol, 353
,, Mr. J. Castleman-Brown Leeds, Kent, 363
,, Mr. Jas. G. Godwin, Withington, Hereford, 373
,, Mr. T. A. Govan, Saggart, co Dublin, 383
,, Mr. William Bradburn, Sale Cheshire, 393
,, Mr. F. Walker, Smalley Derbyshire, 418
,, Mr. J. Waterfield, Junior Kibworth, Leicester, 423
,, Mr. J. B. Fenney, Kirby-in Cleveland, Yorks, 443
,, Mr. R. North, Kirkby Lonsdale, 453
,, Mr. David Ramsay, Tayport Fifeshire, 463
,, Mr. G. Sawyer, Marlow Bucks, 473
,, Mr. W. P. Cowley, Market Harboro', Leicester, 483
,, Mr. H. Rathborne, Plavia, Austria, 493
,, Mr. C. Adams, Weston Underwood, Olney, Bucks, 503

The British

Bee Journal.

No. 863. Vol. XXVII. N.S. 471.] JANUARY 5, 1899. [*Published Weekly.*

Editorial, Notices, &c.

VOLUME TWENTY-SEVEN.

In penning the first lines of a new volume, and that our twenty-seventh yearly issue, one is almost at a loss to say anything that has not been said already, for "Annual Addresses" are perforce made up of much the same material. Our opening words for a New Year, however, to be appropriate, should be either prospective or retrospective in character, and this time we venture to make our remarks partake of a little of both.

To begin, then, with a piece of retrospect. The past year has been full of interest to bee-keepers. Many of us have had a disappointing time, so far as our experience of the honey harvest is concerned. It will take a long while to make us forget the honey-dew season, and when the writer of these lines includes himself (as he must) among those whose harvest was, for the first time in his over thirty years' experience, practically spoiled by this "honey pest" of '98, readers will understand his appreciation of honey-dew.

But to get away from the "personal," it is very gratifying to know that a good proportion of bee-keepers have done very well indeed with their bees last year; and, for the rest, they are going to be the lucky ones in '99, for "good seasons (you know) always follow bad ones."

Regarding the general progress made by the craft as a whole, it has been very satisfactory indeed. Bee Associations should be taken as a test of this, and these have—to use a homely phrase—"done well." Those of older growth keep up their membership, and we don't hear murmurs of "impending bankruptcy" anywhere among them; while the newly-formed ones have shown the energy and vigorous activity of youth and new-born zeal. This latter quality has, however, been stimulated not a little by increased interest on the part of the general public in all that pertains to bees and bee-keeping.

It is also a most encouraging sign of the times to note how the public Press is sharing the interest therein. Nor have special items of importance been wanting, foremost among which are the way in which the bee department of the Dairy Show at the Agricultural Hall is developing at that popular annual meeting, and the "new departure" at the Annual International Groceries Exhibition held in the same building. The directors of the latter important Show have met bee-keepers most cordially, and, as is well known to BEE JOURNAL readers, have instituted a bee-department at their Exhibition, which has, to use a popular term, "come to stay." At any rate, it promises well for the coming season to know that "Master Grocers" will compete again in October next on the show bench, and there are visible signs that the section devoted to bee products will be vastly improved and made worthy of British bee-keeping.

There will be plenty of opportunity in future issues for the permanent development of what is at present in a tentative stage, such as the establishment of an apiary for practical and experimental purposes by the British Bee-Keepers' Association at Swanley, Kent. This will, we trust, prove a most valuable feature, and if supported as it should be, will assist in promoting the industry—from the educational standpoint—in the highest degree.

We cannot close without adding a word of grateful thanks to contributors, subscribers, and readers generally, for the past year's progress so far as the increased circulation of our journals is concerned. Without them we should, of course, be "found wanting," but their support spells confidence on their part, and, we add, appreciation on ours.

"THE HAT."

According to promise we print below a full list of subscriptions to the prize fund. In other words, we have emptied Mr. Till's "hat," only to hold it out again as the sum received still needs augmenting :—

PRIZE FUND AT "ROYAL" SHOW.

Sums received or promised :—

The Baroness Burdett-Coutts ...	£3	0	0
Kent and Sussex B.K.A.... ...	3	3	0
British Bee Journal	1	1	0
G. W. Brocklehurst (Kent) ...	1	1	0
"A Friend"	1	0	0
E. Longhurst (Kent)	0	10	6
Mrs. Longhurst (Kent)	0	10	6
Hon. and Rev. H. Bligh	0	10	6
Miss Eyton (Wellington, Salop)...	0	10	6
F. W. L. Sladen	0	10	0
Edwin H. Young	0	10	0
E. A. Cannell (Swanley)	0	10	0
Hubert F. Jolly	0	10	0
R. L. L. (Rhayader)	0	10	0
A. Jackson (Malvern)	0	10	0
J. Castleman Brown	0	7	6
Mrs. Charlotte E. Watson ...	0	5	0
H. W. Brice	0	5	0
E. D. Till	0	5	0
J. M. Hooker	0	5	0
Ernest Walker	0	5	0
W. B. Carr	0	5	0
T. I. Weston	0	5	0
A. J. Carter (Billingshurst) ...	0	5	0
J. H. New...	0	5	0
H. H. Woosnam (Newton Abbot)	0	5	0
W. Woodley (Newbury)	0	5	0
Miss Gayton (Herts)	0	5	0
H. Jonas	0	5	0
R. C. Blundell (Surrey)	0	5	0
Rev. M. W. B. Osmaston (Kent)	0	5	0
W. H. Harris (Ealing Dean) ...	0	5	0
T. D. Schofield (Alderley Edge)...	0	5	0
T. Greenhalgh (Newton-le-Willows)	0	5	0
S. J. Cooper (Leicester)	0	5	0
Rev. W. H. A. Walters	0	5	0
Mrs. H. W. Brice	0	2	6
"A Lady" (Sussex Apiary) ...	0	2	6
H. Brice, jun.	0	2	6
H. W. Seymour	0	2	6
"J. B." (London)	0	2	6
J. S. Greenhill	0	2	6
Rev. Sidney Smith (York) ...	0	2	6
Rev. W. R. Nightingale (Sussex)	0	2	6
W. Herrod (Newark-on-Trent) ...	0	2	6
John Walton (Weston)	0	2	6
H. Edwards (Staines)	0	2	6
G. Sawyer (Marlow)	0	2	6
"The Hastings Heathen" ...	0	2	6
G. Dow (St. Mary's Cray) ...	0	2	0
S. W. Daniels	0	2	0
"Richard" (Market Deeping) ...	0	2	0
"T. B." (Beckenham)	0	1	0
F. G. (Keswick)	0	1	0
"A Beginner" (Staffs)	0	1	0
"W. C. H." (South Devon) ...	0	1	0
G. S., "A Beginner" (Glos.) ...	0	1	0
Total to date	£21	3	6

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to "The Editors of the 'British Bee Journal,' 17, *King William-street, Strand, London, W.C.*" *All business communications relating to Advertisements, &c., must be addressed to* "The Manager, 'British Bee Journal' *Office*, 17, *King William-street, Strand, London, W.C.*"

*** *In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as wel as the page on which it appears.*

NOTES BY THE WAY.

[3527.] We have now crossed the threshold of a new year, which has been ushered in with many a handshake and the cheery wish "A Happy New Year to you." These minor courtesies of life, as one meets neighbour and friend, are encouraging incentives to step forth boldly to meet the future year whose birth was heralded by midnight peals of bells from many a tower; and so I now pass on the wish to every bee-keeper in the land, "A Happy and Prosperous New Year to you."

Thanks, "Auld Reekie" for your reply (3522, p. 513). By all means give us full particulars of how to do it, and also how long the job takes, if the solar extractor is self-acting, if it is bee-proof, if the combs require to be broken up, or if the frames with combs in them just as taken from a hive can be extracted by placing them in the "pan" of the extractor? Also, if any honey is in the combs, does this honey find its way into the vessel which receives the wax? and is this also part of the extractor proper, or is it an appendage outside to catch the wax after Old Sol has cast his beams on the combs and set them running? In fact, friend "Reekie" we are hoping for a full and explicit account of that efficient solar wax extractor of yours.

I cannot myself give any information to "W. N. R." (page 512) as to celluloid, but would suggest that 21 oz. glass in a wood frame, similar to a school slate, would prevent cut fingers and strengthen the "quilt" or cover, so that a little vaseline spread on the underside, where it rests on the ends of frames, and the front of hive and the back dummy, would prevent sticking to the surface and allow of easy removal. The glass if framed need not be in one piece, and then across the middle a strip of wood with the feed-hole would make the affair stronger still, and less liable to breakage, and cheaper.

"*Royal*" *Shows.*—Referring to the editorial remarks on "Royal" Shows, I may say that when I wrote on page 510, *re* Prize Fund for "Royal" Show, and added the "s" making them plural, I not only had the "Royal

Counties" Show in my mind but also future Royal Shows in the years to come, not wishing to spend all the "hatful" of subscriptions on one show. Our Editor reminds me that we have only one "Royal" Show, but I glean from Press notices that the "Royal Counties" Show, to be held under the shadow of Windsor Castle next summer, and that the Queen has accepted the office of President for the year 1899. This fact, coupled with the active interest of Prince Christian, makes it very much "Royal," at least this year.

Foul Brood Statistics.—If our Editors kept an atlas consisting of county maps, and marked each village from which samples of foul broody combs were sent for their inspection, these markings would prove useful in the future when we have F.B. Inspectors, and also in the present if any sale of stocks of bees are advertised, as a caution may be given if apiaries are offered for sale in a district known to be infected with the pest. Some may consider that it would be a hardship not to be able to sell their bees if they lived in a foul broody district, but this hardship could easily be got over if the bees could be warranted healthy and free from disease.

The interests of the craft deserve a watchful eye over the sales of established colonies, and the purchase of such should only be completed where a guarantee can be given to the beginner. I always advocate and advise starting with a Prince swarm, this with a new hive and foundation, and a few days' feeding to establish them, will often give as good surplus as an established stock, and the risks of F.B. will be very small indeed.

To the bee-keeper who intends increasing his or her apiary in the coming season, I would counsel the making or placing the order for making the hives and appliances as early in the year as possible; you will thereby get better terms and probably better work, for the fact that more time will be able to be spent in executing the orders than in the busy by-and-bye.

Registers for the Hives.—The beginning of a new year is an opportune time to start a register; this may be a small square of slate or a card; then the age of queen, number of frames, condition of same, size of colony, and state of stores can be kept entered, also the date of last examination; then in the future a glance at the register will save much time and some bee-life.

The present, No. 1, 1899, will be a good time to start subscribing to the BEE JOURNAL, though to the novice in bee-keeping a good book on bees will be of more service than a bee-paper. The paper or journal is more adapted to those who have passed the elementary stage and require to be posted in all that is taking place in the bee-world; but to the man who hopes for success in the pursuit (it maybe hobby) I should recommend study of a good practical work on bees and a "subscribing" interest in the BEE JOURNAL.

The advent of January has been accompanied with snow storms, so that we are getting some real winter weather. At time of writing, the hills in the neighbouring county of Hants are white with snow, and large flakes are falling thickly against the window.—W. WOODLEY, *Beedon, Newbury.*

"DOCTORS DIFFER!"

PREPARING BEES FOR THE HEATHER.

[3528.] That doctors do differ the following showeth:—"I am pondering over the problem whether in our districts (heather?) it would not be well to give the bees a sudden fill up in the brood-nest before the honey harvest comes in or the supers are put on! If I were sure the little wretches would not bear aloft the invert sugar to any appreciable extent I would be tempted to try it, but not having an elastic conscience, I am in serious doubt."—Rev. R. McClelland, *vide Record*, April, 1893 (page 45).

"When the clover was over I extracted all I could and fed up until the comb round the brood on each frame was filled. Breeding was carried on up to the last but a week before going to the moors (and the heather was really out). I fed up rapidly, took up the hives, clapped in the supers, and my bees were *forced* to store it up where I wanted it—not in the brood-nest, where *they* wanted it. *The honey was of the purest.* . . . . I got more honey from the moors than in any other year. I got much more than my neighbours."—Mr. R. A. H. Grimshaw, *Record* for October, 1892 (page 137).

I condemn "the plan recommended by some prominent English bee-keepers (not Scotch, remember), who advise feeding up stocks liberally with sugar syrup preparatory to their removal to the moors." — Mr. William McNally, *vide Record*, 1893 (page 58).

"A gentleman of intelligence and experience [*and* a Scotsman, Mr. McN.] tells me that his weak stocks made absolutely nothing, and that his strong, well fed hives averaged 40lb. This bee-keeper fed his bees up to the day of their removal to the moors, and to this he attributed the complete success that has attended their labours there."—Editor, *Scottish Bee-keeper*, No. 10 (page 111).

"It has so often been stated that bees are best prepared for the heather by having their stock combs first crowded with syrup, that we once again raise our voice against such a suicidal policy. What folly! When every cell possible should be occupied with brood to keep up the large force necessary for rolling in the honey, which is so near and so abundant."—Editor *Bee Chat*, No. 3 (page 29).

I think I am right in stating that one of *our* Editors described the practice as "pernicious," and the other "descried" it.

After all this, need it be any wonder that an ordinary fellow (N.B., Mr. Woodley)

like myself is in "serious doubt." Can't we start a discussion, and, in Goethe's famous words, endeavour to get "Light! More light!!"—F. E. I.S., *N. B., January* 3, 1899.

RETROSPECTIVE.

[3529.] In taking a look back through the past year, it is evident that bee-keeping continues to forge ahead. A few months ago I received a circular and a price-list of pure cane sugar from a London firm. This shows the changes that time works. Until quite recently it had been quite difficult to get a guaranteed pure cane sugar. For some time past the proprietors of the B.B.J. and *Record* have booked orders for cane sugar at the office of our journal for sale, to enable bee-keepers who experience difficulty in getting a reliable sugar for use in the preparation of bee-food to get pure cane sugars. This consideration for bee-keepers and their bees proves the soundness of the interest taken by our Editors in the pursuit, and our thanks are due to them. When a sugar-refining company begins to seek out bee-keepers, and to furnish them with lists of pure cane sugars and quotations, it is strong evidence that bee-keeping is making headway, that it is now included in the list of recognised industries, and that bee-keepers are found to be a power to be reckoned with. In the future, cases of dysentery should be few and far between.

Until quite recently the use of beeswax has been declining during the last century, but now we have evidence of a decided revival in the trade in beeswax. This autumn a London firm wrote informing me that they are buyers of beeswax in large or small quantities, and inquiring if I could offer them some. I had never before heard of this firm. Advertisers for beeswax have also been numerous. Having taken a special interest in beeswax for some years, I wish to thank "J. H. C.," Teddington (3486, p. 486, December 8), for his interesting contribution *re* wax rendering and bleaching. Also to Mr. Peebles for the description and illustration of his wax-extractor (p. 495, December 15). I am quite prepared to find that wax rendered by such an apparatus as described by Mr. Peebles will be of better all-round quality than that rendered by the Solar extractor, because it is so difficult to improve the colour of wax without lowering other qualities.—S. LOVEDAY, *Hatfield Heath, Harlow Essex, December* 26, 1898.

UNITING BEES IN DECEMBER.

[3530.] Regarding transferring bees in December (3521, page 512) I venture to give you my experiences of uniting bees in December.

On December 14 three pigs got into my garden and turned over one of my hives. The frames all came out, but none of the combs were broken. I only discovered the mishap about three hours after it occurred, and at once carefully put hive, frames, and bees back into their place. I could not find the queen, for it was too dark. Three days after I noticed the bees running all over the front of the hive, and made sure the queen was dead! But as it was a fine afternoon I opened the hive to make sure of this, and after a good search could not find her, but the bees had built a new queen-cell, so this satisfied me. I closed the hive until the evening, then put the frames and bees into another hive with a weak stock, after removing division boards and disturbing the bees as little as possible.

They united peaceably and well, not any fighting, and form now a very strong stock.—E. W. CARBINES, *Cardinham, Cornwall.*

STILL MORE "ROSEMARY."

[3531]. I am very much indebted to "The Drone" (3513) p. 506 of B.J. of December 22 last, and particularly to Mr. "E. H. Y." (3509, p. 502), for their condescending endeavours to satisfy my scruples. The descriptive view of E. H. Y.'s domestic interior is clever, gracious, and full of pathos. I am stung with remorse at the thought of indulging my ungenerous suspicions!

I hope the nom-de-plume adopted by your Loughton correspondent is not indicative of domestic disabilities, to which none are so prone as drones (?). Dr. Johnson once said that he did not object to "'blue' stockings if a woman's wearing apparel sufficiently covered them." In like manner, I hope if those other symbols referred to by "Drone" *are* worn by the lady at Loughton, she is minded to wear them inconspicuously.—THE OPPRESSED BEE-KEEPER, *December* 28, 1898.

(*Correspondence continued on page* 6.)

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Mr. F. Mower's apiary—part of which is seen in our illustration this week—is situated at St. Cross, Winchester. The apiary usually contains about fifty hives of bees, that being the number now on hand, and the owner may be said to be a born bee-keeper, for he says, "From boyhood my hobby has been bee-keeping, and I commenced very early in life with one hive given me by my late father, who used to winter no less than 100 hives each year." Thus Mr. Mower may be very truly termed a life-long bee-keeper, his father having established an extensive bee farm at a place about eight miles from Stonehenge in the earlier half of the present century. "A good portion of the bees were," he says, "kept in what was then known as 'Nutt's Collateral Hive,'" designed and introduced by Thomas Nutt over sixty years ago. This hive was

practically a brood-chamber (with fixed combs) in centre and a surplus chamber on each side and provision for a bell-glass over the brood nest, admission to the latter being provided by several long slits or apertures in the wall separating the brood and surplus chambers.

Although this type of hive has long since fallen into disuse, it was considered by many as representing advanced bee-keeping in the earlier half of the present century, and among the varied hives we have ourselves possessed was a genuine "Nutt's Collateral." But we never could look upon it with favour, and in our hands it soon passed into the region of "relics," to be later on turned into firewood.

MR. F. MOWER'S APIARY, ST. CROSS, WINCHESTER.

Writing of his early experience, Mr. Mower says that in addition to the "Nutt's" hives, they "also used square supering boxes for giving room overhead," the latter being all made by his father. He also has not forgotten the time when a season of "honey-glut" was less rare than now. "Those," he says, "were honey days in reality, and involved sticky fingers for weeks with 'honey everywhere' during the gathering season. The sale of the crop was also," he continues, "more paying than it is now. I remember a firm at Woolwich used to send nine-gallon casks to our house, and while they emptied one over the sale counter, we were filling another; all being paid for at 6d. per lb. in bulk." Among his many bee adventures, Mr. Mower relates how they drove five swarms in one season from a hollow tree in Tedworth Park, the seat of the late Sir John Kelk. "We bored several holes above, and after setting a skep above the holes, smoked the bees up with a smoker of my father's own. After a lot of 'drumming,' we always got the bees out. I love to think now of those pleasant bee excursions of many years ago."

Regarding his present apiary, Mr. Mower writes:—"In 1879 I removed to my present house, taking with me only one hive; this was then all my apiary contained. It has, however, now increased to fifty colonies, nearly all of them in frame-hives of my own make. The winter evenings are almost entirely occupied in preparing and making bee requisites for the ensuing summer. For this there is no lack of room, for my house is an old rambling farm-house (partly depicted on the left in the illustration), and in the capacious outhouses there may be seen bee furniture *ad lib.* My apiary is near the Hospital of St. Cross, where the traveller obtains the well-known traditional gift of beer and bread. The country for miles round is about equally divided into arable and pasture land—clover and sainfoin being the greatest attraction for bees, while heather is entirely wanting. The model of a 'cottage' seen on the right near my better half is a hive that took me some time to make, and was first worked similarly to a straw skep, but I have now transformed it into a bar-frame hive.

The hive on my left gave in '96 no less than 173 lb. of honey, and 168 lb. in '97, and bade fair to do as well this season; but our Hampshire bees had in '98 to depend on later flowers, the fruit blossoms having entirely missed owing to wet weather. You will understand that I cannot give as much time as I should like to my hobby, as I leave early to my work as a gardener and verger to one of the principal churches in this town. But I love bee work immensely, and although I have not kept an account, am sure it pays considerably. First swarm this year."

It is especially gratifying to find one so long connected with bee-keeping for profit still as full of interest in the craft as ever, and still enjoying his "paying hobby" without a complaint either of lowered prices or exhaustion of the supply of bee forage. That we are also pleased at our friend being an old reader goes without saying.

CORRESPONDENCE (*Continued from p.* 4).

NOTES FROM MID-SHROPSHIRE.

HOW I ENLARGE BROOD-NESTS TO ENSURE SUCCESS.

[3532.] It is a rare thing, indeed, to see in the B.B.J. a bee note of any kind from a Shropshire bee-keeper, and yet here in the Mid or Wellington division of the county we are surrounded by scores of bee-keepers, good and true. Hence I send a note, hoping it will encourage some more able pen than mine to contribute to your pages from time to time. An "Echo" from Shropshire would always be read with interest, I am sure. Perhaps it is late to send notes for last year; I will only say that, with the other counties, we had a large share of dark honey and also some beautiful samples. Unfortunately, my take was chiefly dark, and so it is that at the present time I have over one hundredweight in shallow frames every cell sealed, waiting to become bee-food during the coming spring. My shallow frames have "ends," 1⅝ in. wide. They make grand slabs of comb. The box holds nine frames, and some boxes I have weigh 43 lb. and 44 lb. My bee-keeping has extended over four years only, and I may say at once that this is the most enjoyable hobby I have. Of course, we all take a lively interest in the B.B.J.; that was my first speculation, and there has been no cause for regret on that score. It has helped largely to make our bee-keeping successful.

I would also here acknowledge the help rendered by our bee-men at home—I mean in our own district of Salop. They are jolly good fellows. A novice has only to ask and he receives help. Wellington, also, is a very good district for honey. I have taken from single hives 140 lb. and 130 lb. of extracted; a lot of it early dark stuff. I ought to say that I have not obtained those results with ten frames of brood; I have not, so far, taken more than 60 lb. with a ten-frame brood-nest. My practice is to get ten standard frames well filled, and then add overhead ten shallow frames all filled with drawn-out worker comb, which are kept for that purpose. I allow the queen the whole twenty frames, ten of each size. During the first year of the queen's life I only allow the top or shallow frames to be once filled, then I confine her below with excluder. But in the second year (at the end of which she is removed as "worn out"), I allow her to roam and lay at will in the whole twenty frames the season through. I may say that in the second year I have broken such a hive up for division, and found the twenty frames literally packed with brood. That leads me to ask, "Is the standard frame large enough for a queen that is only kept two seasons?" I should be delighted to see this question thrashed out by our leading bee-keepers.

Comb Foundation.—I expect that the "Weed" foundation has supplanted most other makes. Our Wellington Club adopted it early in the season. But I would like to ask bee-keepers, through the B.B.J., has the "Weed" foundation come up to expectations? and is there any real advantage in its use that other makes do not possess? The first note I read of it was from an American paper. I understood that it was to run about ten or twelve sheets to the pound, and that each sheet would be practically stronger than any made in England seven sheets to the pound. I rubbed my hands and said amen! I find, though, that what I buy runs but seven sheets to the pound, and so that worked side by side with other makes there is no real advantage. I used my new "Weed" alongside some of ordinary make thirteen months old, and found the one just as good as the other. But so far as appearances go the "Weed" is a really beautiful production. We have never yet had a description of our friend, Mr. Brice's, new observatory hive. Might I ask him to favour us? Our Editor knows that we boast some good observatory hives in Shropshire—where he has so often "judged" at our shows—and we are anxious to know what the new one is like.

Now for *an unsolicited* testimonial, which I cannot help offering, and I've done. I advertised a circular saw for sale in B.B.J. and received no less than twenty good honest offers. I accepted one, and the gentleman wrote, "Saw arrived in splendid condition, I thank you." When I need to advertise again I shall certainly use your columns. I advise other bee-men to do the same. Wishing a right happy New Year to all friends round the "wrekin."—JAS. CLAY, *Wellington, Salop, January* 2, 1899.

[We do not usually insert "testimonials," and, as carefully as we can, refrain from soliciting them, but by way of change are glad to put the above in print, in the full knowledge that it could be amply corroborated as to the sales effected through our columns.—EDS.]

FLOODS IN ESSEX.

BEES DROWNED THROUGH HIGH TIDE.

[3533.] The cutting enclosed is from the *Essex County Chronicle* of December 23, and will, I think, be interesting to members of the craft who reside high and dry inland. It also shows the sort of places where bees are kept, with more or less success. As to the amount of success achieved in bee-keeping near the sea, I may add that I know quite a number of bee-keepers in the district referred to in the cutting, and the district is a good one for producing extracted honey. Several bee-keepers known to me, who reside on our Essex coast, keep their bees within a few hundred yards of the sea, but even there, by placing the hives in sheltered corners, the bees do fairly well in an average season.—WM. LOVEDAY, *Hatfield Heath, Harlow, Essex, January* 2, 1899.

"High tides have recently prevailed, and considerable anxiety has been felt lest there should be a repetition of the damage caused by the extraordinary tides of November, 1897. At some of the wharves, and at the Maldon Ironworks Company's premises, watchers have sat up at night, but fortunately, although the tides were extraordinarily high, and the water flowed over the walls in some places, the damage done was small.

"At North Fambridge one farmer, who had only about twenty-five acres of his farm which had escaped the disaster of last year, had this small quantity further reduced on the 15th inst. to twenty acres; while a plank on which were thirteen skeps of bees, very heavy with honey, was washed away, and most of the bees were destroyed. Two men "punted" up to the "Ferry Boat" Inn, and were only prevented from rowing into the bar by the width of their punt. Several of the houses were two feet or more under water."

BEESWAX FOR EXHIBITION.

It's a' for the apple, he'll nourish the tree;
It's a' for the honey, he'll cherish the bee; (wax)
The laddie's sae muckle in lo'e wi' the siller,
His reading is faulty as faulty can be.

[3534.] I am sorry your correspondent "Constant Reader" (Forfar) (2140, page 515) has not profited by his study of the B.J. If he refers to my letter (3522, p. 513) he can do likewise, and obtain pure wax as I have done, without chemicals, which requires scientific knowledge, and will not improve the exhibitors' standpoint, as the appearance is deceptive.—AULD REEKIE, *January* 2.

QUEEN WASPS IN DECEMBER.

[3535.] At 9 a.m. this morning (Boxing-day) we found a large wasp, presumbly a queen, on our bedroom window, facing Primrose Hill. I have never seen a queen wasp in London before, especially at this abnormal time of year.—M. LEA, *South Hampstead, N.W., December* 26.

WEATHER REPORTS.

WESTBOURNE, SUSSEX,
DECEMBER, 1898.

Rainfall, 3·28 in.
Heaviest fall, ·75 in., on 6th.
Rain fell on 16 days.
Above average, ·53 in.
Maximum Temperature, 53°, on 3rd.
Minimum Temperature, 25°, on 31st.
Minimum on Grass, 17°, on 23rd.
Frosty Nights, 8.
Sunshine, 32·3 hrs.
Brightest day, 30th, ·6 hours.
Sunless Days, 15.
Below average, 10·6 hours.
Mean Maximum, 47·7°.
Mean Minimum 38·7°.
Mean Temperature, 43·2°.
Above average, 5·8°.
Maximum Barometer, 30·63°, on 11th.
Minimum Barometer 29·45°, on 31st.

FULL REPORT FOR THE YEAR 1898.
WESTBOURNE, SUSSEX.

Rainfall, 26·13 in.
Heaviest fall, 1·56 in., on Sept. 29th.
Rain fell on 161 days (av. 171).
Below average, 3·37 in.
Maximum Temperature, 79°, on Aug. 18th.
Minimum Temperature, 22°, on Feb. 21st.
Minimum on Grass, 17°, on Dec. 23rd.
Frosty Nights, 71 (av. 76).
Sunshine, 1,750·4 hrs.
Brighest Day, July 3rd, 15 hrs.
Sunless Days, 75 (av. 52)
Below average, 86 hrs.
Mean Temperature, 48·4°, (below av. ·8°).
Maximum Barometer, 30·78°, on Jan. 29th.
Minimum Barometer, 28·61°, on Nov. 25th.

L. B. BIRKETT.

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING DEC. 31, 1898.

1898.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Dec. 25....	30·29	39·2	47	35	12	41·2	—
,, 26....	30·00	47·3	55	39	16	47·3	·05
,, 27....	29·40	55·0	55	47	8	51·2	·09
,, 28....	29·39	38·5	43	37	6	40·1	·24
,, 29....	29·19	41·2	49	34	15	41·7	·21
,, 30....	29·61	35·5	38	35	3	36·6	—
,, 31....	29·60	34·2	40	23	17	31·8	·23*
Means	29·64	41·6	46·7	35·7	11·0	41·4	·82†

* Snow and rain. Total, ·82.

Mean vapour tension, 0·212 in.; mean relative humidity, 80 per cent.; mean temp. of the dew point, 35°·5. The rainfall, viz., ·82 in., = 18,550·86 gallons, or 82·82 tons to the acre, or 4·10 lb. to the square foot. For the week ending December 24, the mean temp., viz., 38°·3, was +1°·7, and the rainfall viz., ·22 in., −·26 in. The rainfall, November 27 to December 24, viz., 1·20 in., is −1·05 in., and that January 2 to December 24, viz., 18·20 in., is −7·94 in.

FRED COVENTRY.

Meteorological Observations for December, 1898.

Barometer.

Highest, 30·41 in., on the 22nd.
Lowest, 29·19 in., on the 29th.
Range, 1·22 in.
Average height, 29·94 in.

Thermometers.

Highest Max. Shade Temp., 57 deg., on the 5th.
Lowest Max. Shade Temp., 37 deg., on the 23rd.
Highest Min. Shade Temp., 54 deg., on the 6th.
Lowest Min. Shade Temp., 23 deg., on the 31st.
Range, 34 deg.
Greatest Daily Range, 21 deg., on the 16th.
Least Daily Range, 2 deg., on the 6th and 7th.
Highest Shade Temp. at 9 a.m., 55·1 deg., on the 5th.
Lowest Shade Temp. at 9 a.m., 28 deg., on the 23rd.
Highest Mean Daily Temp., 55 deg., on the 6th.
Lowest Mean Daily Temp., 31·2 deg., on the 23rd.
Mean of Highest Daily Readings, 49·4 deg.
Mean of Lowest Daily Readings, 38·4 deg.
Mean of Daily Range of Temp., 11 deg.
Mean Temp. for the Month, 43·9 deg.
Number of Days Frost in Shade, 7.
Mean of Dry Bulb (9 a.m.) Readings, 43·3 deg.
Mean of Wet Bulb Readings, 41·1 deg.
Mean Vapour Tension, 0·239 in.
Mean Relative Humidity, 83 per cent.
Mean Temp. of the Dew Point, 38·2.

Rainfall.

Number of days on which ·01 in. or more fell, 18.
Greatest Fall in Twenty-four Hours, 0·51 in., on the 6th.
Total Fall in the Month, 1·96 in.
Total Fall in the Year, 19·07 in.

Fred. Coventry.

GOOD ADVICE TO BEE-KEEPERS.

The following admirably useful and excellent advice is extracted from a paper read by the Rev. E. T. Abbott at the twenty-ninth annual meeting of the "United States Bee-keepers' Union," held at Omaha, Nebraska, in September last. We are indebted (as we so frequently are) to our esteemed contemporary, the *American Bee Journal* for the report from which Mr. Abbott's paper — slightly abridged —is quoted :—

Do not expect too much of the Union at the start, or because you have paid your dollar for a few years, and not needed or gotten any help, conclude that you will save your money and not continue your membership. Fire comes when you least expect it, and for that reason a wise business man keeps his property insured all the time, and considers that the feeling of security which he has is abundant pay, even though the fire may never come.

You should remember also that a strong Union is a benefit to the industry as a whole, and even though you may not want direct personal aid, yet you will indirectly be benefited, for whatever benefits the whole works more or less benefit to each individual part.

Do not get the notion that the Union is a sort of trust to force up the prices of honey, for when one man gets more for a thing, several men generally have to pay more for it. One trust is just as wicked as another. If it is wrong to corner wheat, flour, nails, oil, lumber, &c., it is just as wrong to form a pool on honey. It is all right to open new markets, create new demands, in various ways, or to aid in diverting the crop to other and more profitable markets, but no union should form itself into a trust to regulate the price of food products. This should be left to demand and supply, whether the food be honey or something else. Those who attempt anything of the kind are enemies of society. Do not join in the general hue and cry about the useless middle-man, and swear he lives off of other people's labour. Remember that whoever satisfies a desire is a producer, and that the man who opens a market is as much entitled to pay for his labour, as the man who helps the bees produce a case of honey. There will be tradesmen as long as the world stands, and, according to the theory of the evolutionist, that which survives is the fittest.

Do not conclude that it is because something is out of joint politically that you get such a low price for your honey, or have such a hard time in the world. There has been something out of joint in this direction as long as I can remember. The "outs" have always laid all of the trials and tribulations of the people to the "ins," and the "outs" have wanted in, and the "ins" have wanted them to stay out. I presume this will be true until the "blowing of the last trumpet," if one ever blows, and then we will all want to get *in*, I presume. Some may be left *out*, even then. I cannot say how that will be.

If you are a beginner in the bee business, do not think you need everything you see advertised. Things are made to sell in this business just the same as in others, and sometimes the people who buy them "get sold." The more experience you have with bees, the more you will discover that there are a lot of things you do not want. Go slow on the new things, and let the other fellow do the experimenting.

If you take a bee paper—and you should if you ever want to find out how wise some of the fellows are who write for them—do not sit down and write the editor a long letter, the first time you see anything in the paper you like, and tell him what a smart fellow he is, and what a splendid paper he is making out of the "Apis Dissectum." He may say some things you do not like in the next issue, and then you will want to take it all back, but you can't. What is done is frequently harder to undo than it was to do. Then if you give a testimonial to every pillmaker, you may run out of new material in time.

Do not try to run the paper for the fellow who owns it. He may have had more experience than you have. If he has not, and you are real anxious to show what you can do, you would better start a paper of your own. "Always room at the top," they say ; but I have noticed that some things are real shaky at the top—a tree, for illustration. It would be better to go a little slow until you get your hand in, and your nerves a little steady. Be very mild and gentle, especially with editors and cross bees. Do not provoke them to use their posterior extremities too

much, as it might prove injurious to them and uncomfortable to you. It is apt to create a sudden sensation of heat.

If you have a little success, don't brag or tell what big things you have done. It may bring you more competitors than will be good for the business. Let the supply dealers and the factory people do the bragging. They can tell, if they wish, of tons and tons of stuff they have sold, and how they started with a ten-cent. knife and an old shoe-box, and have grown and grown until now they cover acres. It is true, this may induce more fellows to try the factory business, but that will not hurt you. "Competition is the life of trade," but some fellows seem mighty dead at times who get too much of it.

Do not tell all you know, for if you do the other fellow will know just as much as you do, and it is not well to know too much. It makes one's head tired to carry so much wisdom; and then, if people find out a fellow knows a lot, they are all the time wanting to have him tell it, and he cannot find time to do anything else.

In conclusion, I would say, be contented with your lot, but not too contented—no progress in that. Be enthusiastic, but not too much so. One feels so badly when he gets all the enthusiasm knocked ont of him, as he does at times. Be honest, but do not say too much about it. People may think you are "off" if you do. Be kind to the bees, for if you don't you may wish you had.

Echoes from the Hives.

Venn, Cardingham, Cornwall, December 29, 1898.—From fourteen stocks in spring, some of them small ones in straw skeps, I have taken over 600 lb. of honey, extracted and sections, after leaving an abundance of natural stores in all my hives, increased by swarming to twenty-eight stocks, all on bar frames (I stamp my sections and bottles of honey with rubber stamp.—E. W. C.

Ballindalloch, N.B., December 30, 1898.—Weather here has been very open for some time. I may say our first frost came only yesterday, and we have had scarcely any snow yet. Bees, however, have kept close indoors during the whole of December.—D. M. M.

Queries and Replies.

[2141.] *A Beginner's Troubles.*—I am a beginner with bees and a reader of the B.B.J., but there is nobody for miles around me that I know who goes in for bees. I have always had a kindly regard for them, and, happening to be at a farm sale where some stocks were being sold, I boldly bid 5s. for a straw skep, and had it knocked down to me. This is all I have in the bee line. It seems a good strong stock, well stored with honey. To-day, by way of experiment, I made some syrup with raw sugar, and put a quantity of it on the stand. The bees came out eagerly and soon devoured a few tablespoonfuls. Did I act wisely in doing so? I noticed with pity a desperate fight between two of the bees, with fatal results to one of them. They went at it hammer-and-tongs, with the above result.—E. J. Parker, *Maidstone.*

Reply.—Maidstone is a centre of the Kent and Sussex B.K.A., and contains a large number of bee-keepers. It would therefore be an easy matter for our correspondent—now that he has become a bee-keeper—to get into touch with the local hon. sec. of his district, who will no doubt prevent him making such mistakes in the future as feeding *syrup* in the *open* and in December, making same from *raw* sugar, &c. No wonder the bees fought. It is fortunate that general "robbing" among the bees was not brought about, ending disastrously for his "one stock" in question. Bees, if short of stores, must only be fed with *candy* at this season, and that must be placed within or on top of the hive, within reach of the bees, but secure from outsiders. We can only advise that the bees be left severely alone until the spring, and that the interval should be devoted by our correspondent to reading some good book on the subject, so as to make himself in a measure acquainted with the nature of the work and the requirements of the bees.

[2142.] *A Beginner's Query.*—I am but a beginner of barely two years' experience in bee-keeping, but with careful study and help of "Guide Book" and B.B.J. know considerably more about the honey-bee and its habits than I did three years ago. I started with three stocks in skeps bought from a neighbour in May, '97. These hives were in poor condition, but, being a fair season, I got two swarms and about 15 lb. of surplus honey from them. Meantime I had made a frame-hive, into which I put my first swarm of '97. This hive sent off a swarm in the summer of '98. This year I also had two other swarms and but little honey; this year the season was so dreadfully bad in this district, I hived all my swarms in frame-hives, so this made me possess three of the latter frame-hives. At this time I had the offer of driven bees from a skep, and also wished to drive a skep of my own; but with no one to show me, and not having seen such a thing done, I was in a fix. So I sat down and studied what the "Guide Book" says on the subject, and after reading some of your correspondents' letters on bee-driving I resolved to try; so set to work, and in a short time had both lots of bees driven. comfortably hived, and housed in a short time in "A1" style. Now I am coming to the

point. When driving I noticed one queen, but did not see the other, and supposing, or expecting, that both the queens were in frame-hive together, I thought that from what I had read from time to time in B.B.J. I should see one queen turned out dead; but I watched in vain, and no cast-out dead queen was visible. However, last Friday, December 16, was very warm, and bees flying freely, so I just took a peep inside, and on the back frame I saw a ball of wax! Now, having read of bees "balling" queens, I at once concluded that this was the end of queen No. 2. Am I right? I have enclosed ball of wax as I took it from frames.—BERT, *Blackwater, Hants.*

REPLY.—The "ball of wax" received is simply an embryo queen-cell. "Balling" queens is an entirely different matter and is the word employed to denote the matricidal embrace, so to speak, of the bees bent on killing an alien queen which they refuse to accept as the mother bee of the hive.

HONEY-DEW.

What the late Mr. Coleridge meant when he wrote "For he on honey-dew hath fed And drunk the milk of paradise" is not exactly apparent to the bee-keeper. This year honey-dew has been an unmitigated misfortune over the length and breadth of the land. The oldest bee-keepers remember nothing to be compared with it, and if ever before there was an equal plague of honey-dew the fact has not been recorded. And the worst of it is that the season was a shockingly bad one, at any rate. The long hot drought came when the blossoms that yield honey were past; in early summer, when the flow of nectar was at the full, a period of harsh, dry, cold weather set in, and the insects were reduced to idleness. It was hoped that the heather would be more productive than the clover and the beans, but our latest information is that the bee-masters of Wales and Yorkshire and Scotland have done no better than those in southern England. A very small honey harvest has been gathered, and such as it is it has been deteriorated in value by honey-dew. What that means will best be shown by an example. Mr. Rymer, a Yorkshire bee-keeper, was lucky enough to obtain six hundredweight of honey, but it was so much spoiled by honey-dew that he sold it to the poorer classes for threepence a pound. His experience is that of many others.

But the reader who probably knows more of honey on the breakfast table than in the hive naturally asks, What, then, is honey-dew? He may easily find out its appearance, at least. If he will look at an ordinary section, as purchased from the grocer, he will see that the colour is not uniform. There are dark unappetising tracts, as if the delicate tint had been stained. This is caused by the substance known as honey-dew. What it really is has been the subject of controversy. The Rev. C. C. James, of Diss, who is well-known as a bee-keeper, has been kind enough to draw the attention of the *P.M.G.* to the matter, and we can scarcely do better than print his communication, although his explanation is not in our opinion perfectly correct.

"Bee-keepers in all parts of the kingdom have met this year with a grievous disappointment, at least three-quarters of the honey gathered being black and unattractive to an extent never previously observed, at any rate, for the last thirty years. This has been caused by the unusual quantity of 'honey-dew,' which is a secretion of the *Aphis* or green-fly, which has been abnormally abundant this summer upon all vegetation, especially upon limes and beeches. A few heavy rains early in July would have washed this away from the leaves, but while it was there the bees would feed upon nothing else. After the rains near the beginning of August the honey became of a better colour, but the bulk of the harvest, being gathered in July, was of the character described. May and June, the best months in most years, were practically lost from the cold and windy weather, which kept the bees at home; and when warm sunshine did come at last, the bees would scarcely look at the most attractive flowers, of which there was an abundance all around them, but confined their attentions to this food; which being derived by the aphides from the juices of young leaves and tender shoots, and not from the nectar of flowers, gives a honey sweet and wholesome enough, but without aroma, and not pleasant to look at, at least, for critical eyes and palate."

Conclusion in our Next.

Notices to Correspondents & Inquirers.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

MR. W. HERROD writes as under:—"*Re* Mr. Wm. Woodley's query in B.J. of December 22 (3508, p. 501), it matters not what line the goods have to travel on, they are returned at half rate."

H. G. SYMES (Surbiton).—*Moving Bees in February.*—There is no need to cover tops of frames with perforated zinc unless February happens to be an exceptionally warm month. If carefully and quietly moved in winter, nothing beyond closing entrance with wire-cloth or zinc is needed.

All unanswered queries will be attended to in our next.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

The monthly meeting of the Council was held at 105, Jermyn-street, S.W., on Friday, January 6. Mr. Till occupied the chair, and there were also present Miss Gayton, Messrs. H. W. Brice, R. C. Blundell, W. B. Carr, J. M. Hooker, E. Walker, T. I. Weston, and the Secretary. Letters of regret at inability to attend were received from Messrs. W. H. Harris, H. Jonas, P. Scattergood, jun., and C. N. White.

The minutes of the previous meeting were read and confirmed.

Four new members were elected as under:—

Joseph H. Bradshaw, Graugh, Ballinasloe, co. Galway; E. Herbert Byshe, 52, Knolly's-road, Streatham, S.W.; Albert J. Chilcott, Withycombe, Taunton; Wm. Roberts, Lower-street, Ninfield, Battle.

Mr. Weston presented a financial statement giving details of receipts and expenditure during December, 1898, and the report was unanimously agreed to.

It was resolved to ask Mr. Jonas to accept the office of treasurer and trustee to the Association in succession to Mr. W. O'B. Glennie, resigned. A resolution passed by the Committee of the Lancashire and Cheshire B.K.A., requesting the Council to take action against an exhibitor charged with exhibiting "fed back" old honey in a class for produce of the year 1898, was considered, and the matter adjourned for the production of further evidence in regard to the alleged offence.

LANCASHIRE AND CHESHIRE B.K.A.

PROPOSED SEPARATION OF THE COUNTIES.

Since 1882 the interests of bee-keepers in Lancashire and Cheshire have been encouraged and watched over by a joint association. Owing to the wide area now covered by the present association and for other reasons, a strong desire has been expressed in Cheshire for a separate association for the county itself, in the firm belief that apiculture could thus be more successfully fostered and extended in the two counties. A meeting of bee-keepers was held on Thursday week at the Grosvenor Chambers, Newgate-street, Chester, to discuss the desirability of forming a separate association for Cheshire. The Rev. J. F. Buckler, rector of Bidston, was voted to the chair. There were also present Miss Stolterforth (Wybunbury), the Revs. T. J. Evans (Tarvin), E. Charley (Ince), H. G. Glenn (Barnston), and E. A. Hulton (Hargrave), Messrs. T. D. Schofield (Alderley Edge), W. E. Little (Chester), T. Dale (Huxley), O. Roberts (Willington), P. O. Cotgreave (Hargrave), Thos. D. Smith (Oxton), Joseph Cunnah (Marford), J. A. Bally (Oxton). The following resolution was moved by the Rev. T. J. Evans, seconded by Mr. J. Wynne, and after being well supported carried unanimously:—"That a separate Bee-keepers' Association be formed for Cheshire, and that steps be taken to bring about a separation from Lancashire at the next annual meeting of the Lancashire and Cheshire Bee-keepers' Association." It was also resolved, on the motion of Mr. O. Roberts, and seconded by the Rev. E. A. Hulton:—"That the following gentlemen be appointed a committee to confer with the Lancashire members of the L. and C. B.K.A., viz.:—The Revs. J. F. Buckler, T. J. Evans, Messrs. W. E. Little, J. Wynne, and Thomas D. Smith." The hearty manner in which the proposed county association is being taken up augurs well for its success, and Cheshire bee-keepers are invited to communicate at once with any of the members of the above-mentioned committee. Letters in favour of the movement were read at the meeting from Messrs. J. J. Salisbury (Upton), J. Smith (Oxton), H. Bell (West Kirby), Jas. Molyneux (Crewe), Kinner (Parkgate), J. Ryder (Vicar's Cross), John Cotterill (Bowdon), George Lambert (Comberbach), F. Dutton (Huxley), H. Firth (Rock Ferry), J. Oultram (Kingsley), H. Bate (Rudheath), G. Atkin (Rock Ferry), P. H. Rawson (Market Drayton), T. Moore (Hartford), S. Woodward (Kingsley). W. Bradburn (Sale), J. Lyon Denson (Chester), &c.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

PREPARING BEES FOR THE HEATHER.

IS FEEDING BEFOREHAND NECESSARY?

[3536.] In your issue of January 5, "F. E. I. S." (3528, page 3) gives us a few extracts from various sources with the view of showing how "doctors differ" when preparing their bees for the heather. Having taken bees to the heather for a good few years, I gladly open the discussion invited by your correspondent by describing my way of preparing the bees for the moors, which has given me the best results. I am modest enough to be sure that the plan is not new, only I have never seen it minutely described before. But here it is:—

About a week before I take the bees to the heather I determine how many hives are to be sent, and from those that are chosen I remove the queen and join on a nucleus stock, with young queen to each hive. Any combs that

have no brood or very little in them are removed and replaced with combs from another hive containing whole slabs of brood (unsealed larva preferred). This enormous population will be hatching out while the heather is coming into bloom, and the bees will be forced to enter the supers at the very start for want of room. The working population of the hive are thus all young bees, which will live and labour to the end of the season. The young queen—as I have found by experience—manages to fill the six centre frames of comb with brood on an average. The bees fill the other combs in outside frames with honey, which one will scarcely grudge them when they yield from 30 to 60 lb. of surplus comb-honey from each hive. In 1895, by working on this principle I obtained an average of 60 lb. of heather honey from each of my three hives which were prepared for the heather.

I have never tried feeding, but on the face of it, I can't say that I like the idea at all. A great many of the bees must be killed by hard work, and very little room left for the queen to lay, leaving the stock so weak at the end of the season that it is scarcely able to stand the coming winter.—EXPERT, *Doonfoot, N.B., January* 9.

"DOCTORS DIFFER."

PREPARING BEES FOR THE HEATHER.

[3537.] As your correspondent, "F.E.I.S.' in B.B.J. of 5th inst., is anxious to hear the opinions of bee-keepers on above subject, I may be permitted to give mine. I have for the last twenty-two years taken my hives (bar frames) to the moors (fifty miles from home), and, like "Doctor" R. A. H. Grimshaw (whom I consider the wise one of the lot!) have—provided no honey was flowing in—always fed moderately. By this I mean a little over the bees' daily wants for two or three weeks prior to going to the moors. This feeding causes breeding to go on, and it is desirable that it should be, in order to provide for the great loss in bees that usually takes place while they are in their exposed positions on the hill-sides, battling with chilling winds and frequent showers of rain, common to higher altitudes. I have often noticed that the stocks of other bee-keepers, who did not trouble themselves in preliminary feeding, did not do nearly so well, although equally strong in bees. Their supers were often either half filled or quite empty, while those that had undergone the feeding referred to had their supers nicely finished and the brood combs better filled with honey. I would observe, however, that while this feeding is going on no supers or sections should be placed on hives before the last week prior to starting for the moors, so as to avoid the "risks" referred to by the Rev. R. McC.

This is the practice I have followed all along, and bee-keepers hereabouts are beginning to see this plan is the right one to ensure best results. I may also state that I have never found in any one of my supers, either finished or partly finished, the slightest trace of syrup; and, so far as my experience goes, there is little risk of syrup being taken up and placed in supers or sections before or after the honey (heather) flow is on.—JOHN HALL, *High Blantyre, N.B., January* 9.

MAKING BEE-CANDY.

[3538.] As a reader of the B.B.J. I have been interested in the recent correspondence regarding candy-making. My ideas on the subject and those given by Mr. Woodley on page 501 are something similar; but he gives no help to the candy-maker so far as judging when to remove the candy from the fire! This is, I think, the secret of good making. I will therefore give my experience. My pan (kept exclusively for sugar-melting) holds 12 lb. of sugar, to which I add a teaspoonful of cream of tartar and one pint of hot water, and I always have a brisk fire ready, and the pan remains for about twelve minutes. In testing its readiness for removal I drop a small spoonful of the boiling mixture into a cup half full of cold water, and if ready it should easily form into small soft balls when moulded between the fingers. After removing candy from the fire it requires half to three-quarters of an hour to cool before commencing to stir. I then stir till it becomes a whitish colour, and about the thickness of starch, then pour it in the candy tray. This has been my method of making for the last ten years.

I note that Mr. Woodley intends to try Mr. McNally's method of boiling for two minutes only, but it seems to me an utterly inadequate time seeing that you require to dissolve the sugar with the water and then boil it (the water) out again. I send you a sample of my candy made as above from pure cane sugar, which costs me 1s. 2d. per 7 lb. bag. I would like some bee-keepers to try my method of making candy and give their idea of it.—"A CONSTANT READER," *Forfar, N.B., January* 9.

P.S.—Perhaps you will give your own opinion of sample of candy enclosed herewith?

[Candy received is very good in quality, but hardly so smooth in the grain as some we have seen of Mr. McNally's make.—EDS.]

SOME OF MY BEE WORK IN '98.

IN A FARMER'S APIARY.

[3539.] Last autumn, a farmer's wife—knowing my fondness for bee work—wished me to go and examine their hives, take the honey, and put the bees right for winter, &c. I agreed to do this, and, on reaching the place, found about twenty lots of bees in a rather queer pickle from the bee-keeper's point of view. There were among them two frame-hives, straw skeps with various kinds of supers on, cheese-box hives, and one large tea-chest.

On getting into close quarters, I found the supers, when put on, had hardly been covered up at all, or in the scantiest fashion, and a great many of the sections were entirely empty, or, in some cases, two or three just in the centre of racks, filled. The hives seen with supers on were old stocks, ranged in one corner of the orchard, and the surplus honey was soon cleared from them. I had then to see to the swarms ; these were scattered about the place in a haphazard fashion—in fact, the skep or box in which the bees were hived had been set on a bag or box, and thus they had been left, some in one place and some in another, to take their chance for good or ill. Some of these swarms I was to drive, also a few of the old stocks, and transfer enough comb and bees to furnish two new bar-frame hives. After completing this part of my work, I brought home the rest of the driven bees in bee-bags, and they are, I hope, going to do good work for me this year.

One of the swarms had been set (without any floor-board) on two fence rails, the latter leaning upon a wooden rail in a hedge, and there, set up among the thorns, the swarm remained until the bees had built nearly as much comb hanging from below bottom of skep as they had in it, and that was full. Another lot of bees, consisting of no less than three swarms united together, were housed in the "tea-chest" I have referred to, and had done splendidly ; but the owner did not consent to my touching these beyond turning the box over and inserting a false bottom just underneath comb. I also made an entrance in side, and fixed up an alighting board for the bees.

One of the driven lots I made up in a frame-hive for the farmer has since been cleared out of house and home by robber bees and wasps ; but I don't think any pains were taken to prevent this, and, as we know, with bees the "race is to the swift and the battle to the strong," just as with all the world.—JOHN KIBBLE, *Oxon.*, *January* 4.

WAX EXTRACTING.

[3540.] I thank you kindly for your editorial notice of my Solar Wax Extractor, and beg to enclose a piece of the wax I extracted for your inspection, but you must not consider me such a "blunker" as to place combs "just taken from a hive," say at 70 deg., with comb which requires 14 deg. to liquefy. Honey under such conditions would quickly ripen, and if I adopt the hint I can utilise an adaptation on the storifying principle without artificial heat. I am too "canny" to cause the bees to congregate on an appendage outside to catch the wax. The Solar Wax Extractor is automatic.

My BEE JOURNAL for 1898 is in course of binding. When returned, I will relate the particulars of my reading from the journal, and give a detailed account of my own arrangement.—AULD REEKIE, *January* 6.

[Wax is very good in colour, and exceedingly clean, so far as being entirely free from any of the débris usually found on the underside of cakes of wax got by the ordinary method. The sample has, however, no aroma at all, a peculiarity already noticed as attaching to wax extracted by the "Solar," in Mr. Weston's exhibit at the "Royal" in 1898.—EDS.]

CELLULOID "QUILTS."

[3541.] Having used celluloid "quilts" for some years, my experience may be of some use to "W. R. N.," who writes on p. 512 of B.J. for December 29. Celluloid or xylonite can be obtained in sheets of almost any thickness, perfectly clear and transparent. That which I have found most suitable is 0·022-inch in thickness ; but it can be obtained as thin as the paper upon which this is printed, and quite bee-proof. Celluloid is not materially affected by the temperature of the hive, and should it buckle through undue strain it may be flattened by pressing with an iron which has been heated in boiling water. If the thickness be not less than 0.022-inch, no frame is needed ; but thinner sheets should be cemented into a saw-cut made in the side of a frame. I use celluloid feeding stages, supported in this way. Propolis may be easily removed by means of soda and water, or a rag moistened with methylated spirit. Not being porous, celluloid is not permanently stained by propolis, and for the same reason no foul-brood germs can find a lurking place in it. Boiling softens this material ; but I would like to point out that boiling is *not* the best means of destroying the spores of bacillus alvei. It is well known that while the bacillus itself is killed by boiling, the spores can resist a temperature of 212 deg. F. If, however, these spores be immersed in warm water of about 100 deg. F., they hatch, to use a familiar expression, and the resultant bacilli soon perish in the absence of a suitable nutritive fluid. A second scrubbing after such immersion ensures absolute freedom from infectious germs or bacilli. Those who have a liking for carbolic acid can use it on celluloid. Not being so hard as glass, celluloid scratches easily ; but it can be rendered transparent again by brushing over with a brush moistened with "velvril" solvent. It is quite waterproof, and being a bad conductor of heat does not condense the hive moisture like zinc. I have used celluloid queen excluders for some years, and before adopting them made a number of experiments, all of which showed that the bees preferred celluloid to zinc. In several hives I placed half a zinc and half a celluloid excluder and divided the section crates in halves corresponding with the excluders. In every case I found that the sections above the celluloid were more readily occupied and more quickly filled than those above the zinc. When the relative positions of the two halves were reversed the bees still showed their preference for the non-conducting

material. It is more than probable that the bees are repelled by the chilling effect of the zinc, or, putting it another way, they will pass through a celluloid or other non-conducting excluder at a temperature of the outer atmosphere several degrees lower than in the case of zinc.

There are several other uses for celluloid in the apiary; but I fear I have already exceeded the limits of space in this reply to "W. R. N."
—WALTER F. REID, *Addlestone, Surrey, January* 9.

THE MOON AND THE WEATHER.

[3542.] The following is an extract from *Notes and Queries* for September 23, 1882 :—

"Sir W. Thomson: The Moon and the Weather.—Sir W. Thomson's remarks at the last meeting of the British Association remind me of a jingle I heard many years ago from one who had been a life-long observer of the weather. It may be worth preserving in 'N. and Q.':—

"'The moon and the weather
May change together;
But change of the moon
Does not change the weather.
If we'd no moon at all,
And that may seem strange,
We still should have weather
That's subject to change.'

"*Craven.* "ELLCEE."

FRED. COVENTRY.

Duddington, Stamford.

"NOTES" AND "QUERIES."

A LADY READER'S CHATTY LETTER.

[3543.] Another charm to hand in the shape of the B.B.J. for December 29, the last of the year now just ended. I am especially gratified to see the index in it. I have been a reader of the paper since last February, and often hoped there would be an index ere long, for one often wants to look up little things we remember to have seen in back numbers. I *so* much enjoy taking the paper, and eagerly go to our station for it, often reading it on my walk home. In fact, it seems now quite part of the week's necessary support, and it is indeed a privilege to find oneself weekly in earshot (I often wish it were in eyesight) of my favourite writers, of the "princes" among bee-keepers; to read their experiences; to be spurred onwards by their example, and to be affected by that subtle influence which emanates from all pure country homes and pursuits. Their environment seems to work, through the writers, a purifying, elevating influence on readers; at least *I* find it so, and I fancy I am only an *ordinary* reader. I often feel inclined to write back on little things, *but* penny stamps are a serious item for my modest purse, and as yet I can't afford to join the B.B.K. Association. I also know you are as busy as possible already, and think only something really of use to readers would justify my occupying space in your pages.

A little while ago (in Autumn) in an extract from an American bee journal I remember the writer asked, "Why bees wiped their eyes with their antennæ as they came from the hive?" I began bee-keeping last February, and being very fond of my wee folk, the bees, I observe them closely. Noticing this "wiping" of their eyes, I put it down to the fact that they must have had their heads in a honey cell, and not being provided with serviettes, so make use of the antennæ. I must notice this closer next season, but at present I think they only act thus when emerging for a forage flight, having previous to starting partaken of nourishment to support them until they return—it may be a *long* time. Thus I surmise. I *may* be wrong, but am willing to be corrected.

On page 494 of B.B.J., December 29, your correspondent "E. D. T." asks concerning "Kissing being out of season when gorse is not in bloom." I answer, and that is Never! Who would venture to say kissing is ever out of season? Parting friends, lovers, and the sweet, chubby faces of many a nursery! think how they would look askance and openly defy the herald of such an announcement! Is the gorse *ever* out of bloom? Here in Cumberland it never seems so, and among the Westmoreland Fells I have always considered it one of Nature's most refractory children. Early autumn, every late summer, always displays some gorse bloom. Oh! how I have longed for a fairy wand to close all the golden blooms and keep them closed until February month! Why can't they learn to keep in step and time with other flowers? Autumn, winter, spring, and summer, their blooms may be found, and so I conclude they can't help it. The difference in the age of the plants must, no doubt, hasten or retard the bloom—also the difference in the age of the twigs or branchlets—while sheltered nooks and exposed heights must also cause variations, resulting in a constant succession of flowers. Besides, the nature of the plant is that of a *profuse bloomer*.

In October I extracted honey from combs by cutting the latter up and using the method called "dropping," I then pressed the rest out of the combs in a muslin bag with two rollers made from a sweeping-brush handle cut in halves. In the latter operation I also pressed out some pollen with the honey, and have about 4 lb. of this in a jar. This leads me to ask, when the time comes for stimulative feeding in spring, could I give this to my bees diluted with water? Or would it be injurious in any way? I thought it might answer the same purpose as giving artificial pollen? There seems to be an abundance of pollen in this neighbourhood all through the season. From early spring willow pollen and laurustinus to late autumn ivy.

Since writing the above, I see in this week's

B.B.J. that Messrs. R. Hamlyn-Harris and W. H. Harris have answered the question as regards gorse blossom. I am gratified to learn that these observations regarding it are in accord with mine, and especially as they will have had a wider acquaintance with it than myself.

(*Conclusion next week.*)

BEES BUILDING IN THE OPEN.

A SWARM IN A HEDGE FOR SEVERAL MONTHS.

[3544.] The accompanying photograph represents a vagrant swarm of bees and the combs built by them in the open side of a hedge. The combs are attached to very slender supports, as may be seen, and although the hedge is by a road the bees were not discovered till the autumn, when the crop in adjoining field was being reaped. The combs were on the inner side (that is, next the field), facing the north, and were thus protected from the sun. Originally it must have been a very large swarm, which after vainly waiting to be hived took to making their home in the open. The combs were seven in number, and built with great regularity, all oval in shape, with the apex pointing downwards. The largest was nearly 2 ft. long by 16 to 18 in. wide, the others graduated to the outside, which were the smallest. The photo was taken in the last week of October, 1898, when the number of bees (native blacks) must have considerably dwindled in consequence of their cold quarters, while there was hardly a trace of honey left in the cells. I am also sorry to say the combs were wantonly destroyed by some mischievous persons on the same evening the photo was taken, and before means could be taken for the preservation of both combs and bees.—H. J. Banks, *Wragby, Lincolnshire.*

[So good a picture—from life—of an instance of bees building combs in the open air and occupying them for several months, as is here shown, is very rare ; both readers and ourselves are therefore indebted to Mr. Banks for the opportunity afforded of seeing a reproduction of the photo in our pages. There can be no doubt as to the vagrant swarm having been a very large one at the time of issue, bearing in mind how considerable must have been the bulk of bees required to generate and maintain the heat necessary for comb-building and brood-rearing in the open air.—Eds.]

A VAGRANT SWARM.

BEES AND CRICKET.

A STRANGE DILEMMA.

[3545.] The accompanying extract from the *Naturalists' Chronicle* will probably interest B.J. readers :—

"A somewhat unique occurrence, and one happily not always included in a game of cricket, was recently experienced at Giout Son, Constantinople, when a match between H.M.S. *Nymph* and the Bebek C.C. was materially

interfered with by a swarm of bees, who quite invaded the ground, apparently mistaking the coat of the umpire (who was wearing Bebek colours—yellow and black) for a lovely and enlarged sunflower.

"Nothing would induce them to recognise their error; from time to time they put a stop to the game, and while the futile efforts to get rid of the buzzing busy bees appeared highly amusing to the spectators, the swarm was most distracting to the bowlers and batsmen, the former particularly being in a continual state of a struggle with the all too attentive insects."—R. HAMLYN-HARRIS, F.E.S, *Tübingen, Germany, January* 7.

BEE ANATOMY.

A USE FOR THE SPINE ON THE TIBIA OF THE SECOND LEG OF THE BEE.

[3546.] The spur or spine at the lower end of the tibia is attached to its inner side by a joint which is freely movable; as usually seen it is at right angles to the tibia, but when in use it closes down on to the planta. The arrangement is somewhat similar to the sinus and spine on the first leg for cleaning the antenna. In cleaning the first leg, this is placed between the spur and the planta, the second leg is then drawn over its posterior border; the first leg is then placed under the abdomen, when the process is repeated with its anterior border. The length of the spine is only equal to half the breadth of the tibia or planta, so that it is necessary to place both borders into the space for cleaning.

The third leg is cleaned in the same way, at any rate as regards the anterior border.

I have seen the above several times with a lens.—G. F. O'FFLAHERTIE, *January* 9.

A SWISS BEE SCHOOL.

[3547.] In *Chambers' Journal* for the current month there appears a most interesting article by George Gale Thomas, entitled "A Swiss Bee-School," which I am certain all bee-lovers would keenly relish the perusal of. Describing this bee-school our author says:—

"Certainly it is not a school for the training of bees. The energetic and ingenious little creatures have, by their natural instincts, more nearly realised the ideal state than any democracy on earth. It is a school for the training of those who would learn the secrets of bee-culture and become apiarists.

"Three-quarters of a mile up the mountain-side on the verdant Rosenberg it stands overlooking the quaint little town of Zug, whose ancient towers, white-painted houses, and brown roofs peep out from the trees, contrasting with the blue water of the lovely lake. Here, in this verdant spot, I found the *Bienenmuseum;* and its custodian, Herr Theiler, gave me a ready welcome as an English comrade of the craft, and showed me his treasures with the enthusiasm of a bee-lover.

"There were photographs of famous bee-masters the world over; samples of honey from every canton and every crop, from the rich honey of the cherry orchards of Zug to the alabaster-like product of the white clover of Bernina; specimen hives, bees of all kinds, as well as a thousand other things of interest, from petrified bees to manufactured wax in various forms. . . . .

"Adjoining the museum, however, is the châlet where the actual bee-culture is carried on. Upon entering I found myself in a large room with rows of doors one above the other in the wooden walls. Opposite, a small glass tower projected from the further side of the house, and here I found myself at once in the midst—save for the protecting glass around—of thousands of bees on the wing. . . . It is in this châlet that bee-masters are trained in the school of practice. Students may come here for the summer from all the cantons of Switzerland. Not only is the course free to all, but the Cantonal governments give premiums to the pupils in order to encourage the study."

Our author informs us that at the present time there are twenty-five students—entirely of the peasant class—undergoing instruction at this school of apiculture.

"To each student a hive is allotted, and a card is affixed to the back, bearing his name, with notes of the progress of the colony of which he has the care. The rest of the hives are in the charge of the bee-master, and these, with the profits of the periodical publications, entirely support the Swiss Bee-keepers' Society—*Verein Schweizerischer Bienenfreunde*—which itself receives no subsidy from the State for its work."

I am of opinion that our British Bee-keepers' Assoctation could learn something as to how best to systematise their instruction from a study of the methods employed by this practical bee school in Switzerland.

"From the little school at Zug every year go out future bee-masters, while the extensive library of works on apiculture is always in circulation through the post among the members of the society, and it will not be long before the ten thousand millions of bees—to take a moderate estimate—who gather in the Swiss honey-harvest during the hot summer days shall give place to a still more numerous army."

There are two or three points raised in this most interesting article that might with advantage be discussed in the pages of the B.B.J. For instance, our author says that the 105 colonies kept on the Rosenberg "are chiefly of the small brown variety common in Germany, and differ little, if at all, from the native English bee. The bee-master had several other kinds in stock also, but he pinned his faith to the little German bees. 'Neither Italians nor Carniolans for me,' said he; 'these little bees are out gathering when the others will not venture out for the heat.'"

Are these German bees identical with our British black bee?

Another point. Mr. Thomas explains that "More than a hundred alighting-boards at the entrances to the various hives were scattered over the face of the house on both sides of the tower. These were painted in all the colours of the rainbow, *to enable the bees each to recognise its own hive*—bees having a strong sense of colour—and to save the battles which always take place if bees attempt to enter hives not their own." Is it at all necessary to have our hives painted various colours? The words I have underlined in the above quotation would imply that it is.—R. Whyte, *Maxwellton, East Kilbride, Lanarkshire, January* 8, 1899.

[We gladly insert the above *résumé* of Mr. Thomas's interesting article, and thank our correspondent for it. At the same time—and for the information of such of our readers as are unaware of the fact—we may say that our Senior Editor, Mr. Cowan, is just as much "at home" with the bees and bee-keepers of Switzerland as he is with those of this country, and is fully aware of all that goes on in the interesting Alpine Republic. Indeed, it is not too much to say that Mr. Cowan is as popular among Swiss bee-keepers as with British, and being an honorary member of the Swiss Bee-keepers' Association, he knows all about the educational work done there. This being so, and with regard to the B.B.K.A. learning something from Switzerland in systematising their instruction as suggested, the difficulty which perpetually confronts the Council of the B.B.K.A., is the question of *funds*. That body is not—like members of a Swiss canton or commune—privileged to use public funds for instruction in bee culture. Would that we were, for if so our correspondent may be safely assured that more good work would be done than is at present possible.—Eds.

METEOROLOGICAL

Observations taken at Duddington, Stamford, Northants, for the Week ending Jan. 7, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Jan. 1	29·18	33·3	39	33	6	36·1	·19
,, 2	28·81	33·0	41	31	10	36·2	·14
,, 3	29·61	36·1	43	33	10	38·2	·01
,, 4	29·89	40·1	52	35	17	43·8	—
,, 5	30·18	30·9	43	29	14	36·3	—
,, 6	30·20	33·0	43	23	20	33·4	·03
,, 7	29·81	41·0	48	33	15	40·8	·09
Means	29·67	35·3	44·1	31·0	13·1	37·8	·46*

* Total, ·46.

Mean vapour tension, 0·187 in.; mean relative humidity, 88 per cent.; mean temp. of the dew point, 32°·5. The rainfall, viz., ·46 in., = 10,406·58 gallons, or 46·46 tons to the acre, or 2·30 lb. to the square foot. For the week ending December 31, 1898, the mean temp., viz., 41°·4, was +4°·7, and the rainfall, viz., ·82 in., +·34 in. The rainfall, November 26 to December 31, 1898, viz., 2·02 in., is −·71 in., and that January 2 to December 31, 1898, viz., 19·02 in., is −7·60 in.

Fred Coventry.

HONEY-DEW.

(*Concluded from page* 10.)

The point in dispute, of course, is as to whether it is a secretion of the aphis or a direct product. Mr. Cowan, the President of the British Bee-keepers' Association, whose name we cannot mention without expressing our sympathy with him in the loss of his son and daughter in the *Mohegan*, believes that it is not. He holds that it is "an exudation from the pores of leaves under certain atmospheric conditions," and adds, "We have on several occasions examined trees producing honey-dew in abundance that were free from insects. At Hohwald, in Alsace, we spent some time watching bees collecting honey-dew from the conifers, but found hardly any insects." Another well-known expert, writing in the *Bee-keepers' Record* for September, says, "On a number of leaves collected a short time back, and microscopically examined, I found on thickly-coated leaves of the lime and sycamore not more than three or four insects per leaf; and when an hour after collection the beads of honey-dew were much thicker than first examined, and this after the insects had been removed." It may be added that this is practically the opinion of the well-known French authority, M. Bonnier, who sums up the whole matter in a way to reconcile the divergent views. He says (*Apiculture*, p. 440):—

"Honey-dew (*la miellée*) may have two very different causes which should not be confounded. It is very often produced by *pucerons* which attack the leaves particularly rich in sweet juice within the tissues; these insects digest only a small part of the matter absorbed, expelling the greater portion of the liquid, which falls on the leaves in viscous drops; this is the *meillat*. The *miellée* can be produced in the absence of every insect by a kind of exudation from the leaves; this is the *miellée* properly so-called." As he says that hot dry days separated by cold humid nights are the most favourable to the production of honey-dew, one can well understand why it should have been so prevalent in 1898. Its occurrence in such quantities is the more to be regretted inasmuch as the refinement of modern bee-keeping has produced a taste for beautifully coloured and delicately tasted honey such as is got from the flower of the rasp, from white clover, from bean blossom, or from lime blossom. But it must be said that the bees add a certain stupidity to many admirable qualities; they will go on gathering a dark honey from the bramble flowers and

neglect the glorious heather beside them, and they will fasten on honey-dew when they might be applying their industry to the nectar on flowers. It should be said, however, that honey-dew, though vastly inferior to true honey, is not positively injurious; its faults are of the negative order, and lead only to a lowering of quality.—*Pall Mall Gazette.*

Echoes from the Hives.

Hatfield Heath, Harlow, Essex, January 9.—Conditions were never more favourable than now to spring-dwindling in apiaries where no attention is given to securing young queens at the head of colonies. The bees have had only two weeks' rest, and that incomplete; they were flying almost daily till well into December, and now they are very active again. Thus, the bees having been able to take frequent flights, most of the old ones have died outside the hives, and the absence of the usual accumulation of dead bees being brought from hives on a warm day is very noticeable. Apart from the extra wear and tear of the bees the outlook, from the bee-keeper's point of view, was never more favourable. The plant that will, weather permitting, provide abundance of forage for the bees later on are strong, and the breadths of them are large. I have trapped twenty mice in my apiary during the last few days. With colder weather these would have gone to the neighbouring farms. Field sparrows are very troublesome here this winter. The number of bees taken by them is very large, as the stings wiped from their beaks upon the flight-boards of the hives show.—Wm. Loveday.

Chichester, Sussex, January 3.—If not too late, will you find room for a brief report of season here in the South of England? The bees were quite ready for honey-gathering by mid-June, but the honey did not come, and dry weather setting in for several weeks together all moisture seemed gone out of the earth, consequently almost nothing was obtained from the clover, which is our chief honey source in this district, a good deal at times being grown to the south of my apiary. To the north is the city of Chichester, where it is all bricks and mortar, with the exception of the limes, of which trees we have several hundreds growing around the cathedral and by the old walls of the city. These, when in bloom, yield very well some years, and a good many more young trees have lately been planted. This will be good for bee-keepers no doubt at times, but from this source we got nothing in '98, as the blooms appeared to dry up for want of rain. My average was only about 15 lb. per hive, free from honey-dew. Wishing all bee-keepers a prosperous season for 1899—J. D.

Southfleet, near Gravesend, January 7.—Enclosed please find P.O. (2s. 6d.), small contribution to Mr. Till's "hat." The last season was the worst I ever experienced. Plum and currant trees swarming with aphis; leaves dripping with the so-called honey-dew; bees working at it late and early; contents of combs in sections black as ink! But we don't despair. We rather look forward to 1899 for a record season. Wishing you a happy and prosperous New Year.—Elvey E. Smith.

Queries and Replies.

[2143.] — *Non-swarming Systems and Various Queries.*—Will you kindly oblige me through the B.B.J. with information on the following points:—1. What is your opinion or experience of Simmins' non-swarming system? 2. Why should not all hives be worked on this system, *i.e.*, with non-swarming chamber under the broad box? 3. Why should not a super—or shallow-frame box—(of course, without the frames) be placed under the broad box in winter, *instead* of a shallow lift, and thus save the extra cost? I should think the extra depth under the brood frames would be an advantage rather than otherwise. If so, why advise a "lift" of 2 in. or 3 in. deep to be placed under brood box for wintering, which has to be bought for the purpose, when the super boxes are lying idle? (This lift, of course, to be removed when breeding commences in the spring, and the entrance *always* under same.) 4. When a swarm is returned to the hive, what is the chance of the old queen being killed by the young one? 5 Is it *necessary* or advisable to cut all drone comb out of brood combs in the autumn, or will the bees remove same? 6. How is it that a person who is said to feed back '97 honey to bees in '98, and exhibits same as '98 honey, is not when same is proved disqualified from showing again? Otherwise other exhibitors must do likewise, and so make a farce of shows from an exhibitor's point of view, or cease from exhibiting, as no honest bee-keeper could possibly compete against this sort of practice.—B., *Flixton, Manchester.*

Reply.—1. First let us say our personal "experience" of the system here referred to is nil—never having had any need for trying it in our practice. Regarding our "opinion" we have no doubt that in efficient hands it will succeed at times and fail in others, just as will all other systems devised with the same object in view. 2. It being perfectly open to all to try any plan for the prevention of swarming that has been, or that may be, made public, it seems obvious that nothing more is needed than allowing the exercise of free

choice of methods to all. 3. There is no reason whatever why a box minus frames should not be used to give space below brood-nest in winter in lieu of a 3-in. "eke" (if that is what "B." calls "a shallow lift"), but as some prefer the latter, we think no one need object. 4. The chance is not a very bright one. 5. Any superfluity of drone comb must be removed by the bee-keeper. The bees won't do it. 6. We are not aware of any instance of refusal to disqualify in such a case.

And now, having replied as fairly as we know how to our correspondent's queries, we hope to be excused for asking, "How is it he did not write his name legibly?"

[2144.] *Clipping Queen's Wings, to Prevent Loss of Honey.*—Can you tell me in the next week's issue how the wings of queens are clipped to prevent swarming? Also whether you think it a good way to prevent loss of swarms? Does it injure the queens in any way except in flying? Any information will be welcome, or if you could tell me if there is a good article on the subject published, you will greatly oblige a five year old reader of the B.B.J.—J. Geary, *Hinckley, January* 7.

Reply.—The operation known as "clipping" queens, though largely practised in America, does not meet with much favour in this country. It is, however, misleading to speak of clipping queens as "preventing swarming," because a clipped queen will swarm as readily as one unmutilated. It is more correct to write of clipping as preventing loss of swarms, because when the clipped queen falls to the ground from inability to fly, the bees either congregate around her or return to the hive. Another way of preventing loss of swarms is using a queen trap, which fulfils the same purpose.

NEATNESS IN THE APIARY.

Many people have the idea that a man who is not fitted for any other vocation, has talent enough to be a farmer. The time was once, too, when any one who had sufficient moral courage, could be a bee-keeper. Happily, thanks to science, that time is past. Farmer or bee-keeper, he must read, study, and experiment in order to be successful. The man who is contented to keep bees in the old-fashioned way, because that is the way he learned, cannot compete with his wide-awake neighbour, who makes use of the experience of others. New methods and new inventions are constantly being brought before his attention, which he must either accept or reject. This is where his judgment and past experience will be of use to him. But there are other points to be remembered that play a prominent part in his business. I will refer particularly to beauty and neatness in the apiary.

Neatness is tact dressed in its working clothes, and is a fairly accurate barometer of a man's usefulness. Work done carelessly is never done right; but if a man takes pains to do his work neatly, he is quite sure to do it well. If the arrangement of his hives is slip-shod, without any idea of symmetry, you are led to suspect that he is careless in his care of the bees through the honey-season. Beauty and neatness may not seem, at first thought, a source of profit, financially, at least. But have you tried it? The bee-keeper that lets the grass grow up in front of his hives is leaving hindrance sufficient to strip him of several pounds of honey every year. His honey-house, unless constant care is exercised, will be made unsightly by leaky sections, broken combs, and propolis. Neatness will pay here in the wax it will save. Every bee-keeper should, as far as he is able, create a market in his own vicinity for his honey. Neatness and cleanliness are the two essential points here. People are unwilling to eat the produce of an untidy man. They don't like to buy extracted honey from a dirty-looking can, with perhaps a fly or bee to be fished out occasionally. Neatness here will be his trade-winner. His honey-house and his honey-can can be his best advertisement, or the ruination of his trade, if honey can be secured from some other place. How long would your store-keeper hold your trade if his untidiness were so apparent as to become offensive so you? You would probably look elsewhere for your groceries if such were the case.

There are many clever ways by which one can not only make their apiary beautiful, but often time more convenient. I have in my mind a bee-keeper whose daughter is something of an artist. She added to the beauty of her father's apiary by painting over the entrance of each hive a bit of scenery or landscape. The effect was pleasing; but this, of course, is not practicable for us all, but will serve as an example of one of the many things a person can do to make an apiary attractive.

In our own yard the hives are arranged in two squares; or, rather, a square within a square. All the hives face the centre of the yard, at which spot stands a large hive so arranged as to accommodate four swarms of bees. This we have found a very convenient hive to use. The flag of our country floats from a staff on its roof; and as our hives are painted red and white, it adds to the beauty of the yard. It is not only patriotic, but, as it floats on the breeze, it has a tendency to accustom bees to motion. It seems very reasonable to me that it would have this effect; and although our bees are within a few yards of the house, it is a very rare occurrence for them to trouble us. The ground is dug out where each hive is placed, eight inches larger all round than the hive. Four cedar stakes are driven into the ground for the hives to rest on. The part dug out is then filled with coal cinders and packed hard. This leaves a space all around the hives free from grass, and allows room for the lawn-mower to be run. We have

found cedar stakes more satisfactory than hive stands, because the moles cannot work around them to such an advantage, and change the hives from their level. In driving these stakes a square frame is used for a guide, and a spirit-level to get them true on top. Our yard has been laid out in this way for twenty years, and during this time the grass has always been kept short, and we know that it pays.

There is another fact that has a bearing on the care of the apiary. Most bee-keepers follow up this vocation in connection with something else. The farmer with his forty or eighty acres finds that his bees add a good sum to his income besides furnishing his family with the choicest of sweets. The market-gardener also finds that it pays. The fruit-man has his bees do a double duty by having them fertilise his flowers. Professional men find them a pleasant pastime for leisure moments. Nearly all bee-keepers, in fact, divide their time between the bees and some other occupation, and because of this the bees often suffer for want of better care. His other business is liable to take the bee-keeper's attention away from his bees, except to do what is absolutely necessary to ensure a fair crop of honey; and sometimes results in their getting less attention than this. However, the bees cannot furnish him with employment at all seasons of the year (not in this State, at least) as other work is necessary if he is to be a busy man. His bees at certain seasons of the year will suffer worse from neglect than anything else he has; but he will find it to his advantage to give them their share of his time.

In treating this subject, it would hardly be doing justice to the bee not to give her her due as to neatness and beauty. Who has seen a better piece of workmanship than that of the honey-comb? Neat, because of its cleanliness, and its greatest possible economy of space. It is tact dressed in its working clothes again. It is beautiful in the eyes of every lover of nature. Surely the example of the bee is a worthy one for its keeper to follow in the care of the apiary. But, dropping all other arguments, it is well worth a man's time to give his apiary this care merely for the satisfaction he will derive from it. It carries with it the spirit of "Whatever is worth doing at all is worth doing well."—ELMER H. HUNT in *Bee-keepers' Review* (American).

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

BEE HIVE (Devon).—*Groceries Exhibition.*—We know for a fact that the directors of the above exhibition were most anxious that the honey section of the exhibition should be dealt with in a liberal spirit and without the infliction of any hardship whatever on exhibitors. Being a new departure, of course some details were perforce left in somewhat inexperienced hands, but the "conditions" as to non-return of exhibits and also regarding ownership should have been read over carefully by all exhibitors. In any case the bee section of the next "Groceries" will probably be placed in the hands of experienced bee-keepers, and it can do no good to discuss the question whether it is good or bad policy to confine the entries to master grocers only. This matter will no doubt be gone into early this year, and we hope to see the classes increased and additional prizes offered.

J. P. (Derby).—*Clarifying Wax.*—1. There is no need for us to qualify our statement on p. 515 as to a few drops of oil of vitriol sprinkled over the surface after withdrawal of wax from the fire improving its colour. The failure in our correspondent's case probably arose from his error in adding too profusely of the vitriol while boiling. 2. The wax from which sample of comb-foundation sent is made bears no trace of chemicals having been used in its preparation. It is evidently made from old wax of very dark colour.

A. D. (Tarbolton, N.B.).—We will make inquiry as to bee journal named and reply next week. Our last copy is dated November 19, 1898.

S. HARBORNE (Cornwall).—*Early "Robbing."*—The weather has been so very spring-like at times quite up to end of December that bees are tempted to "rob" just as they so often do in a warm February. There is no need to do more than reduce entrances to about half an inch.

(DR.) WM. ALLEN (Hawkshead).—We shall be very pleased to give insertion to any interesting bee notes you may be good enough to send for print. May we forward you some printed wrappers for sending Press copy in?

EUCLID (Long Eaton).—*Honey Sample.*—The honey received is of very good quality indeed, the flavour being excellent.

LANCELOT QUAYLE (Glenmay, Isle of Man).—*Varieties of Heather.*—Our correspondent will find illustrations of the various heaths useful to bees as honey-plants on p. 361 of B.J., vol. 24. We will insert these again in present volume for reference. The two blooms sent are *Erica Calluna*, common ling, and *E. cinerea*, or bell heather, both good honey plants.

J. W. SPENCER (Atworth).—*Honey Imports.*—Much obliged for drawing our attention to this. We will endeavour to obtain permission from the Board of Agriculture to publish the article referred to in our columns.

Editorial, Notices, &c.

USEFUL HINTS.

WEATHER.—Unless we are to have winter at a season when bees are usually gathering pollen and breeding fast, it would appear as if the time-honoured snow-covered hills and ground, flinty with hard frost will be entirely absent in '98-9. Anyway, we are now within a fortnight of February, a month when the sight of hives with entrances busy with bees carrying in big pellets of bright yellow pollen is a familiar one to all old hands at bee-keeping.

The present inactivity of our colonies, so far as outside work is concerned, would be only normal, and in every way satisfactory, but for the fact that it is not caused by real winter weather. The temperature keeps just high enough to cause undue consumption of stores for the generation of heat inside the hive, yet low enough to delay the rousing up of the breeding instinct in the bees, so that there are no big patches of brood on the combs such as are sometimes found in the beginning of February after a hard early winter in November. Taking the weather condition as a whole, then, so far as bees are concerned, it behoves us to keep a watchful eye on every stock in the apiary.

SELLING HONEY.—With a minimum of space at our command this week, owing to the crowded state of correspondence columns, and a maximum of subjects on which we desire to offer a word, we must reserve room in next issue for several "hints" on matters needing attention. One question, however, raised by Mr. Woodley in his "Notes" on page 22 is so pressing in its interest that we prefer to deal with it at once, and so help to avoid anything in shape of what financiers call a "slump" in the honey selling trade. Of course Mr. Woodley (practical always) writes directly from his own experience, and this is right and proper so far as it goes, but we venture to say there appears in the present issue of the B.B.J. very fair evidence of good sales for honey in '98. And if further testimony was needed in corroboration, what can be said of the following note (received at this office so recently as the 17th inst.) from a "Wholesale Honey Merchant"—to quote business card—and also "a honey grower himself," who writes :—"If you could let me know of anyone having honey for sale I should be greatly indebted to you, as I want half a ton of good stuff at once.

"As a regular subscriber to your journal, I, of course, see all the advertisements in it, and have bought two tons this season through its agency, but have not been able to buy enough."

(Continuation of "Hints" next week.)

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of December, 1898, was £1,343.—*From a return furnished to the* BRITISH BEE JOURNAL *by the Statistical Office, H.M. Customs.*

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to "The EDITORS of the 'British Bee Journal,' 17, *King William-street, Strand, London, W.C.*" *All business communications relating to Advertisements, &c., must be addressed to* "THE MANAGER, 'British Bee Journal' *Office,* 17, *King William-street, Strand, London, W.C.*"

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

NOTES BY THE WAY.

[3548.] *Candy-making.*—As a further help to candy-makers I beg to add *that we boil our candy ten minutes* after it reaches boiling point, and by strict attention to details get our cakes of just that nice firmness requisite to stand a two-mile shake up to the out-apiary without collapsing into an unstable mass, yet soft enough to allow the finger to be easily pressed into the cakes, or to melt in one's mouth without mastication or sucking. When removed from the fire the saucepan is placed in a vessel of cold water, filled deep enough for the water to reach the height of the liquid candy inside. This is left a few minutes while the moulds are being lined with paper to receive it when ready. I then commence stirring until the contents of saucepan assume a consistency which just allows it to run into the moulds before the mixture stiffens.

Wax Extracting. — I well remember the "Solar" extractor and the sample of extracted wax exhibited by Mr. Weston at the "Royal" last June. The general opinion I heard expressed by bee-keepers present was that the "Solar" would prove a useful appliance in the apiary and help to keep the store-room clear of old combs and odd scraps of wax which are usually kept till the bee-keeper finds time for the melting-up job, and as this "messy" task is generally put off as long as possible, I say that procrastination here is a big source of loss to the bee-keeper, for he often gets forestalled in the wax extracting by the larva of wax-moth, which leaves very little after it has gnawed its sinuous way in various directions through the combs. The odour generally attached to wax extracted by fire and water in the old style was not noticeable in the wax extracted by solar heat—the odour being probably given to it by boiling with pollen grains and propolis which are extracted from the combs by the higher temperature of boiling, and the squeezing process necessary to separate the wax from the cocoons and other debris. It would appear that beeswax itself has little, if any, odour of its own. However this may be, I have never been able to detect any odour about combed-sections cleaned out by the bees after extracting. Has any one else had a different experience?

Honey obtained from combs by the "Solar" wax extractor was also shown in Mr. Weston's useful and instructive exhibit, and a very creditable sample it was. Perhaps Mr. Weston will tell us how to do it?* I hope that secretaries and members of show committees for the coming season will keep the "Solar" wax extractor to the front and offer prizes for the best constructed extractor, with the products of same; in fact, it would be instructive, if not a "good draw," if a competitive examination was introduced (weather and temperature permitting) for "Solar wax extractors," say, a weighed quantity of comb be given to each exhibitor, and the extractor which gave the best results in wax should be the winner. When we Benedicts in bee craft have each an efficient "Solar" wax extractor then heigh ho! for the growing of the rosemary!

Foul Brood.—Can our Editor inform us how the eradication of foul brood is progressing in Canada? It is now several years since the Ontario Legislature passed an Act for its suppression, and Inspectors were appointed to carry out its provisions. Is it a success?

Honey Sales.—I don't know how my immediate friends amongst bee-keepers are clearing off their produce this season, but for myself sales have been very slow, and orders small compared with previous years. Nor can I account for such a dull market. I have heard of a few who have experienced some difficulty in finding a market. One thinks, Is it the mild weather? Some say that the bee-keeping industry is growing faster than the demand for honey. Is the cheap preserves crowding the jar of honey off the breakfast table? or the cheap golden syrup, bright and transparent as the finest sample of honey? Another keen competitor is foreign honey. I fancy this is often sold as "English" at 9d. per screw-capped jar. Now, good British honey costs (according to your advertising pages) 6½d. per lb., which with packing and carriage is 7d., then the screw-capped jars cost 1½d. each, leaving ½d. profit to the retailer, if we are to compete with the foreigner. I will throw out one more hint as a reason for the "slow sales." I may be wrong in my premises, but there may be a modicum of reality in the reason, and that is continual press notices during the late drought of the widespread diffusion of honey-dew, and that the honey crop of 1898 being spoiled by the bees gathering this aphidian secretion, has weaned large numbers off the using of honey this season. This, to my mind, is one cause of our "slow sales."—W. Woodley, *Beedon, Newbury.*

* Mr. Woodley evidently forgets that Mr. Weston gave full particulars regarding every item in his exhibit in class 357 at the "Royal" show, and that it is fully reported on page 261 of B.B.J. for July 7 last year, the honey being specially referred to.—Eds.

"WELLS" HIVES IN THE ISLE OF MAN.

MR. LANCELOT QUAYLE'S REPORT.

[3549.] In reference to "Wells" hives, I would like to ask your readers (1) whether any one has used these hives without a common upper chamber (I mean, keeping the two stocks apart throughout, and using perforated division board only in brood chamber)? and (2) what is the advantage of letting the bees have common access to the supers?

I have never given a trial to the "Wells system" until the season of 1898, and the following is my experience:—I tried two hives on the "Wells" principle. In No. 1 I put two six-frame stocks of Carniolans, imported on May 19, and allowed ten frames to each stock in the brood-chamber. I supered with shallow frames on June 13. Shortly afterwards they started swarming, which spoiled their honey-gathering, and I only got 97 lb. from the combined lots. I mention this hive principally because I think I made a mistake in confining these young queens to only ten frames each in brood chamber.

Into No. 2 "Wells" hive I placed in one end, on May 25, a small swarm weighing 2½ lb. On June 8 I put a swarm weighing 5 lb. into the other end, and supered with a common super on June 28. Naturally, the larger swarm took possession of super in stronger numbers, and undoubtedly gathered the greater part of honey yielded by this hive; but I noticed that the bees of the larger colony worked only above their own brood nest, building, filling, and sealing the combs

directly above their own brood chamber, and leaving untouched frames of foundation next to full combs. The same thing was noticeable in No. 1 hive, and this fact has led me to ask the two questions at the beginning of my letter. No. 2 hive, composed of the two swarms, gave me 135 lb. honey, which, I think, is a wonderful production under the circumstances, and I doubt very much that they would have given the same results in two single hives.

Some of your readers may be curious to know my honey takes for the year 1898.

My highest yield was 175 lb. :—

5 hives, spring count, yielded	670½ lb.
4 imported (six frame stocks)	306 lb.
4 swarms from skeps ...	195½ lb.
Total	1,172 lb.

This, in addition to several full combs kept for future use, and sufficient stores in each colony to put them through the winter.—LANCELOT QUAYLE, *Glenmay, Isle of Man, January* 9.

SIZE OF BROOD NESTS.

AS AFFECTING HONEY YIELD.

[3550.] In reply to your correspondent Mr. Clay (3532, p. 6), I wish to say that I see no reason why it should be necessary, to ensure success in obtaining the results quoted by him to have a brood-chamber larger than the ordinary hive, taking ten frames of the standard size. Equally good results have been and can be obtained by the use of the ordinary ten-frame brood-chamber in any district that can fairly be considered a good one for bee-keeping in an average season. I very rarely have more than ten combs in the brood-chamber. Success is not ensured by any one kind of hive, but by having only as many hives as can be well managed, and, like so many little engines, "driven for all they are worth." If hives are so worked that all old honey is used up when the honey-flow commences, and every one of the ten combs is well filled with brood, it requires a good queen to be able to do more than keep the ten combs completely occupied in this way. More often than not, when hives are supered, there is a good deal of old and new honey in the brood-chamber, and if the latter is enlarged by degrees, the bees can be prevented from filling the combs with honey to the exclusion of brood. Much depends, too, upon having enough bees of the right age in the hive when the season opens. I usually confine the queen to just so many combs as are well filled with brood when the honey-flow commences. If the outside comb is mostly filled with honey, and there are more than ten combs in the brood-chamber, I take away an outside comb. I have also obtained very good results with even less than ten combs in the brood-chamber. Last season one of my stocks that gave the best returns in both quantity and quality of honey was supered when the brood-chamber was contracted to only seven standard frames, and had no more all through the season. The work done by this stock was more perfect than that of some others.

Young queens also are a preventive of so many of the ills that bees are subject to that they are indispensable if the best possible results are to be obtained.

In reply to your correspondent's further question, *re* foundation, I answer yes. The "weed" foundation has quite come up to my expectations, and has certainly given me perfect satisfaction. I cannot say this much of other makes, although I have had *some* parcels of good foundation from other makers. In 1895 we had an average season, but I was only saved from failure by the ready-built combs I had on hand. The whole of the foundation supplied to me that season by one of our largest manufacturers stretched to such an extent that it doubled up in a roll on the bottom bars of frames and sections. A bee-keeper in the Midlands, who looks to his bees for his living, writes me that he was supplied with bad foundation last season by another of our large manufacturers. The figures sent me by this bee-keeper show that his loss by using this bad foundation was very serious, to say nothing of the annoyance. Manufacturers who rob their customers of both pleasure and profit in their bee-keeping cannot hope to secure repeat orders. — WM. LOVEDAY, *Hatfield Heath, Harlow, Essex, January* 16.

A SAFE SWARM CARRIER.

HOW TO MAKE IT.

[3551.] To make a swarm-carrier that may safely be sent by rail without fear of suffocation, and that will fit any skep or round basket, get a piece of perforated zinc about 20 in. square, and first find the centre by marking lines from corner to corner, then mark out a circle 20 in. in diameter by means of a pair of large compasses (or a bradawl and piece of stick). Then cut out to this line. Now mark two places on its outer edge 4 in. apart, and from these draw two lines to centre. Cut out this V piece. Now bring the edges of this so that they overlap ½ in., and by means of solder or rivets fasten together. Next procure a handle such as is used for drawers (costing a copper or two) and rivet on in centre. Mark four places round outside edge, punch holes, and thread a piece of stout cord about 1 ft. 6 in. long through each of these. Now make a circle of stout wire about 8 in. in diameter with four small circles twisted at equal distances round it. Through these thread cord. To fix it to skep place wire circle on ground, put zinc over and draw cords tight. Owing to its cone shape it is impossible for porters, &c., to place anything on top and so shut out air, while the handle

makes it very convenient to move without jarring the contents.—WILL. HAMPTON, *Richmond.*

BEE NOTES FROM ESSEX.

[3552.] By way of occuping spare time these long evenings, I thought it might not be amiss to send you a few notes of my bee-doings during the past season of 1898.

After finishing my sales of surplus stocks I started the season with 102 colonies of bees, and thinking they would do better if parted, I hired a piece of ground about two and a-half miles from where my home apiary is situate; then removed forty stocks on to the new location, but they have not done very well this season, although surrounded with plenty of bee forage. As illustrating the lack of honey from white clover in '98, I walked across a field of it about a quarter of a mile from home the third week in June, and on close inspection could not find more than two bees at work on the whole field, although the blossoms covered the ground as white as a sheet! I managed, however, to get some very good honey from sainfoin, trifolium, beans, &c. As soon as surplus-chambers were found to contain a few cells partly filled with honey dew I and my man at once set to work with the extractor and cleared the lot out! And it was well we did so for the combs were then filled with the darkest stuff my bees have ever gathered.

During the past season my take is over one ton (about 600 lb. of which is dark), all of which I sold before October was out at a fair price, and could have sold another ton. I had to return the money to several customers; in fact I can sell my honey better now than I could when I only had 100 lb. in the season. Bee-keeping is, I find, like any other trade; if you want to get on you must serve your customers well; you will then have no difficulty in selling, or getting repeat orders.

Bees in this part did not swarm very much, although the hives were crammed; they seemed to work well and yet did not make any progress in honey gathering. Towards the end of July I removed most of my supers, and began to calculate how much sugar I should require to feed up my stocks for the winter. A change for the better, however, set in, and they very soon put the larders right.

I have never seen bees work so well as they did this season on the second crop of red clover.

In August I went round to different villages, and saved over fifty stocks from the brimstone pit by driving, all of which driven lots I added to my own bees, re-queening doubtful stocks, and strengthening weak ones, by the introduction of fresh blood, and it is very satisfactory to state I have never yet come across a case of foul-brood.

With reference to the "Wells system," I have given it a fair trial, as I have thirty of these double-queened hives, but cannot find out where their advantage comes in. After all my experience with large numbers of stocks I cannot beat a 10-frame hive, taking one season with another.

I have at the present time 112 stocks at my home apiary, and 52 located in out apiaries, making a total of 164 stocks. Of that number 18 are in skeps, and the rest in frame-hives, so I have plenty of workers and a fair amount of white clover around me. If we get suitable weather at the right time, I hope to have a busy time with the extractor in 1899, as I work chiefly for extracted honey.

Wishing all bee-keepers a prosperous season in 1899.—A. TWINN, *Ridgewell, Halstead, January* 14.

P.S.—I enclose 2s. 6d. for "The Hat."

BEE-HOUSES.

WHY NOT ADOPTED IN LARGE APIARIES?

[3553.] I have found your "Homes of the Honey Bee" pictures very interesting, but it has seemed to me to be strange that none of the big men (the fifty or 100 hive Nabobs) go in for bee-houses, instead of having all separate hives with such a number of roofs, lifts, &c., to move when manipulating, changing crates, &c. I conclude there must be some good reason for the separate hive system, and I shall be much obliged by an explanation hereon.

Would painting the inside of a hive make it injurious to bees? [No.—EDS.]

My year's work has been to increase five stocks to nine, and take 2 cwt. honey, mostly sections, all of which I have sold at a fair price.—TRYON, *Liskeard, January* 13.

(*Correspondence continued on page* 26.)

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Mr. Trice, whose neat and orderly little apiary appears this week, though "not an old hand at the craft," bids fair to make a bee-keeper who can make honey-producing pay. He sends so interesting an account of his bees and "doings" that we need not add anything:

"I am not an old hand at the craft; in fact previous to 1894 I knew nothing of bees or bee-keeping, but at Shalford Park Show in that year I witnessed the manipulation of the first frame-hive I ever saw. Being much interested I bought 'Modern Bee Keeping,' and read it through several times, soon grasping most of its contents; but "driving" bees puzzled me much, not having seen this operation at Shalford Park. The same year, however, the Berkshire Bee-van visited Chilworth, and I made up my mind to learn how bees could be 'driven,' but missed again, as I could only attend the evening lecture, where,

of course, no bee-driving was practicable; but by reading 'Modern Bee Keeping,' the explanation of it as given by the expert, and what I found in the book, I resolved on trying to keep bees. I bought my first skep of bees the same week, being a swarm which had issued a month previously. With all the hurry of a beginner, I supered my skep, but got no super honey, of course, as it was getting too late in season for that, so I made a bottomless box to put round the skep in winter, and packed with chaff and added a roof on box. This same roof appears on skeps in foreground of picture. The bees wintered all right, and in the following spring I put skep on the top bars of a frame-hive, and after the bees had worked down I transferred the contents of skep to another frame-hive, and so increased my stock to two frame-hives, from which I got 26 lb. of surplus. By purchase in spring and swarming, then driving some condemned lots in the autumn, I made up in all nine colonies for wintering in 1895. These wintered well without loss, and in 1896 I secured a fair quantity of honey before being compelled to remove my apiary in July about thirty yards away. This lost me a lot of bees, and I had no swarms that year, but drove some more condemned lots and made up in all twelve stocks for wintering at close of 1896. In the following year I was asked by the hon. sec. of the Technical Education Board to allow a course of lectures to take place at my apiary, which I did. The skeps shown in picture have disappeared and frame-hives taken their place, so that I have now twenty colonies in all, the whole being in frame-hives with standard frames; and I may here say that I drove over twenty lots before ever seeing a skep driven. I do all my transferring from skeps by setting them on top of frames and allowing bees to work down to the brood chambers below. This done, the skep is taken off, frame-hive examined for queen, and if not there bees are driven from the skep, a queen-excluder set above frames, and skep replaced to allow brood to hatch out, and the skep remains on as a super.

"The year 1897, although a backward spring and my apiary much exposed to north-east winds, was a fairly successful one for me. I had six swarms, all of which I returned; weight of swarms varied from 4 lb. to 9 lb. The 9 lb. swarm was returned and I got over 66 lb. of surplus from it. Of course last season I was troubled with dark honey, as most other bee-keepers were; but nearly all my surplus is sold, only about 50 lb. left. I had no swarms in 1898, but raised a few queens to replace old ones. In queen-raising I have no special method of my own, but follow Mr. Brice's teaching in B.B.J. and *Record*.

"The railway line seen in the background is the South Eastern Railway between Chilworth and Shalford. I 'placed' my children at the

MR. G. TRICE'S APIARY, CHILWORTH, NEAR GUILFORD.

back of the hives, as you see; but I had to leave the good wife out, as she does not take too kindly to bees, though she helps with the work indoors, such as uncapping, extracting, bottling, glazing sections, &c.

"I often hear people say, 'Does bee-keeping pay?' I say, yes, if looked after properly; but if a skep or bar-frame hive of bees is put in the garden and no further notice taken of it, then, perhaps not. But you can judge for yourselves whether mine has paid or not. My total expenditure has been £25 13s. 10½d., and my total receipts £29 18s. 6d., about 50 lb. of honey on hand, and twenty colonies of bees in frame-hives, with all necessary appliances for working the apiary to the good."

CORRESPONDENCE.

(*Continued from page* 24).

BEES IN TREES.

HONEYCOMBS HID FOR HALF A CENTURY.

[3554.] The attached cutting I have had laid by for some time, with the intention of offering it for insertion in B.B.J. if sufficiently interesting. It is from *The Dawn of Day*, for May, 1890. This subject is very different, as far as being feasible, and no doubt true compared with newspaper accounts of bees, toads, and other things that we read of from time to time as having been discovered in a block of stone, and such like places. For bees to be sealed up in the way here described is well within easy range of probability, as all those who interest themselves in trees and study their growth know. Trees, in this country, make their growth almost entirely from April to August. And, supposing the hole by which the bees entered this tree to be only about large enough to admit one bee at a time I can quite understand this hole being reduced in size by the growth of the tree during a night in June. So that while there might still be a tiny hole in the following morning it would be too small for the bees to pass through it. Different kinds of trees differ in the amount of growth made in a season, but it is only necessary to observe and note the amount of growth made even in a week in moist weather at midsummer to see how possible it is for a colony of bees to be hermetically sealed in a tree, as described in the accompanying cutting.—WM. LOVEDAY, *Hatfield Heath, Harlow, Essex.*

"A remarkable discovery was lately made at the Cathays Yard of the Taff Vale Railway Company. A large elm tree, grown in Gloucestershire, was being cut up into timber when, right in the very heart, a cavity measuring 8 ft. by 7½ in. in diameter was discovered, almost completely filled with the combs of the honey-bee, together with a squirrel's skull. No means of access to the hollow was discoverable, neither was decay anywhere apparent, and around the cavity itself no fewer than fifty "rings," each ring denoting a year's growth, were counted, the outer bark being, too, without a flaw. How the bees got there can only be guessed, but it is surmised that a squirrel once occupied a decayed hole in the tree, cleared away the decay, occupied the cavity as its home, and there died. Then the bees entered into possession and filled the whole with comb, when by some means the entrance, which must have been small, became stopped, the large quantity of grub and fly being taken as demonstrative that the nest was not voluntarily deserted. Then for fifty years the growth of the timber went on. The entrance being absolutely obliterated and the hole being hermetically sealed, the comb was preserved from decay for half a century, to be found at last in the way described. The find is of the greatest interest to naturalists."

WHAT HIVE TO USE.

SOME REFLECTIONS BY A BEGINNER.

[3555.] I began bee-keeping at the end of April, 1898, and have made various notes of my experiences. I think it possible that a record of some of them might be a help to beginners in 1899, even if it is only to point out what to avoid and what to leave undone!

I have, I think I may say, gone into the whole question of hives very thoroughly, and have given a careful trial to most principles—that is to say, I have kept bees in "Wells," "Ford - Wells," "Cowan," "Conqueror," "W. B. C.," and both long and short ordinary hives of different makes (*i.e.*, ten to fifteen frame-hives), all, of course, with standard frames, and, *as* a beginner, I plump with the greatest confidence for the "W. B. C." as beyond competition better than any others *for* beginners. I feel sure that the "Wells" and "Ford-Wells" systems (I am trying them again this year) are *not* suitable for novices. The absolute ease with which the "W. B. C." can be expanded upwards or downwards, to say nothing of the excellent winter store boxes that the empty supers and spare brood-chambers make, seem to me to put it on a different level to other hives.

I see by my bee-notes that I bought two stocks in old frame hives on April 28—a bit late for a proper start. Moreover one of these was weak and the other, I suppose, must have had an old queen, for it never did well. I kept on increasing my stocks, by swarms principally, until November, late in which month I drove some condemned bees. I joined some of these up, and am wintering successfully, I hope, twelve stocks. I may say I am also trying the different breeds of bees. Starting with the English black, I soon found that most of these were too vicious when kept in the garden where young children are allowed to run, so I finally requeened them

all, and have now two Carniolans, three Carnio-Ligurians, and seven pure Ligurians, all young queens of last autumn. I cannot, of course, speak from any experience of these yet, but it seems to me that the light colour of the Ligurian queens are a decided advantage, and I have lifted combs of these bees out of a hive without any smoke, and scarcely a bee flew from the frame. I was also delighted to see one queen laying steadily while I had the frame out and under observation in the sun.

It might encourage beginners to hear that after reading and digesting the various publications (I have bought and assimilated most of the modern and some ancient bee literature), I have found no difficulty whatever in driving bees, spotting, catching, and introducing queens and uniting. With reference to this latter point I tried Mr. Sharpe's plan of simply placing the combs of bees complete into the hive to be strengthened. This worked very well in two cases, but the third time when I endeavoured to unite two combs full of black bees to some Ligurians I have no hesitation in saying that the latter killed practically every one of the former, though the frames were placed in with the minimum of disturbance and, with my former experience, I had every confidence in the success of the venture.

The thing that has puzzled me more than anything else in my short experience is the fact that various stocks seem to take extraordinary *fits of work*. Honey flow and young queens will most emphatically not account for this. Obviously, of course, swarms seem above all to have this working fever highly developed for ten days or a fortnight after hiving, but then also at other times some stocks seem suddenly to go ahead and do as much work in a week as they have done before in the whole season. I have found this most marked, although I have been requeening my hives the summer and autumn through. I have a strong idea that any great disturbance seems to make them "buck up" most noticeably. One hive that appeared very slack at the heather was knocked over by a cow, and I found it (a W.B.C.) sadly reposing on its face! When righted, the bees went to work with a will, and put honey into the—till then neglected—super at a great rate.

The heather season also puzzled me greatly. I sent seven hives to the heather, all made up to *full* strength, and they proceeded unanimously to crowd their brood nest, leaving little or no room for eggs, and in one case only did they store and *cap* the honey in the combs provided for them upstairs! Some of them stored there a little, but did not cap it, and took it all down again before I moved them back home. These had all newly-bought fertile young queens.

N.B.—My friends mostly agree with me in thinking heather honey, when you have got it, very poor stuff—so bitter! Can it be that low-lying bog-heather is not so good as the hill bloom? [This is the general belief.—Eds.]

In looking over my notes haphazardly I find:—The (damaged) queen and another young and fertile one were alive for three days together in the same hive—to my *certain* knowledge! I noticed in two cases (the damaged one above was one) that a balled queen will get her legs bitten off or paralysed in a few seconds—say half a minute.

Is the paralysis of the limbs the result of a sting? Another note I have is about bee-stings. I notice a good deal of correspondence in the B.B.J. about these, but I think no one has given any hint how to palliate the *after* effects—the swelling and irritation that appears to me to be decidedly the worst part of a sting. At the beginning of the season I found that after being stung I was unable to sleep for two nights, the pain of the sting itself, though severe, I don't mind, as it passes away in a few minutes, but I *do* mind the subsequent sleeplessness. Can any one suggest a remedy? For myself, by the *end* of last season I had had so many "business ends" to extract that I got fairly inoculated, but this is a letter by a beginner for beginners as said at the start! I may find also that with the new season I shall want—like Irish setters—to be re-broken to the work! I have had some most interesting bee-driving experiences, notably, one from an old tree stump that we had to hammer for hours, but eventually got the bees to shift! I also came across, to my surprise, some of the old *wattle mud and dung hives* that I thought belonged entirely to last century. I came across them quite by accident. I find in this district you have to "speer" for yourself, so I made myself two bee-bags somewhat on the principle of those advocated in your columns, mounted my "bike" and struck right out into the country "on chance." By dint of following a clue got from a country "Bobby," I eventually found a few old-fashioned skep keepers—these wattle ones among them! I have also been promised *carte blanche* in two houses where bees have been for several years in the walls, one lot in Wales and one in Scotland—so hope to get in some interesting work with them this summer. In one case there are also two lots in hollow trees near at hand, so I have made a careful plan of campaign, which I hope to make interesting reading for (by your kind permission) the B.B.J. next autumn.

(*Conclusion next week.*)

"NOTES" AND "QUERIES."

(*Concluded from page* 15.)

Last spring I had some seeds of the "Chapman" honey plant given me, I sowed them in April last, and later transplanted them into a bed, allowing five or six inches between each plant. I expected them to bloom in the summer, but no flowers appeared, although the plants made a good show of foliage, all of

which have died off this autumn. I see, however, some young leaves now growing. Can you tell me if it is a perennial plant? If it is, I must, of course, let it remain where it is, and hoping for bloom next summer. I would also like to know if "Chapman honey plant" is its only and proper name, or is it merely a local one; perhaps you can give me its specific name, with its genus and natural order, for which I will be much obliged?*

The past autumn has been very mild here, only two or three frosty nights so far. Many a day have I found the bees of my two hives gaily sporting in the sunshine. I fancy I left them sufficient honey to last all through the winter, but for fear my inexperienced reckoning and the mild weather *might* result in starvation, I intend to give each hive a cake of medicated candy this next week.

Regarding next season's work, I don't want more than one swarm from each hive, but supposing that casts, or second swarms, come off, I fear I should *never* be able to capture the queen and thus cause the bees to return. I take it that the proper way to get the bees back is to shake them out of the skep on to the flight-board at the hive-entrance from whence they issued. The following morning at 6 a.m., is it not? The young queen being then at large will, I suppose, vanquish the old one that I return with bees. But, if my idea is right, I should have to examine the hive that swarmed (during the evening of the day it swarmed or casted) to cut out any superfluous queen-cells, leaving only one—the ripest. Would that plan answer? I have never yet seen one of my queens, probably because I disturb them too much on opening the hive and so make the queens hide away on the floor-board, or is it that I am slow of sight? The worker-bees in my hives seem very fine ones, each having three bands of yellow on the abdomen. I noticed a few workers last summer that were quite bright yellow on the thorax, at though coated with bright yellow pollen, but it never grew any the less as days, and even weeks, went by, so I concluded it was the natural gay coat of the bees. They are also very industrious, starting at 7 a.m. on fine mornings in summer and working as late as 6.30 or 7 p.m. I got them from a bee-keeper near Darlington; I believe he obtained them from Holme, near Peterborough.

I half hesitate whether to post this lengthy and disjointed epistle, thinking of your often *long* office days, but I hasten to add that you escape many queries from this quarter by my being able to take the B.B.J. wherein I often find the very question answered which I myself am desirous of asking, and so I do not need to trouble you. In the last B.B.J. there were so many New Year greetings which, as a reader and a bee-keeper, I, of course, take to myself, that I feel justified in reciprocating by expressing my hearty wishes for a happy New Year to the Editors and staff and all readers. I don't like to receive much and give nought, and so thanking you for the boons conferred on me in the past year and wishing you happiness in the coming one, I am, yours sincerely, (Miss) Margaret Moscrop, *Cumberland.*

[We will answer our correspondent's queries next week.—Eds.]

* Full particulars regarding the Chapman Honey Plant and its cultivation appears in vol. xxiii. of B.B.J., p. 141, with illustrations of the plant.—Eds.

METEOROLOGICAL

Observations taken at Duddington, Stamford, Northants, for the Week ending Jan. 14, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Jan. 8....	29·68	44·0	51	41	10	46·2	·01
,, 9....	29·54	40·0	49	38	11	43·7	·01
,, 10....	29·19	46·0	49	39	10	44·2	·09
,, 11....	29·41	34·5	47	33	14	40·1	·47
,, 12....	29·14	46·8	52	34	18	43·4	·08
,, 13....	29·63	41·0	43	39	4	41·1	·18
,, 14....	29·75	35·0	44	32	12	38·2	·01
Means	29·48	41·0	47·9	36·6	11·3	42·4	·85*

* Total, ·85.

Mean vapour tension, 0·228 in.; mean relative humidity, 87 per cent.; mean temp. of the dew point, 37°·5. The rainfall, viz., ·85 in., = 19,229·55 gallons, or 85·85 tons to the acre, or 4·25 lb. to the square foot. For the week ending January 7, the mean temp., viz., 37°·8, was + 1°·2, and the rainfall, viz., ·46 in., + ·02 in.

THE YEAR'S RAINFALL

At Duddington, Stamford, Northants, January 2 to December 31, 1898:—

1898.	Rainfall, in.	Average, in.	Difference from Average, in.
Jan. 2-29	·81	1·79	− ·98
Jan. 30-Feb. 26....	·57	1·66	−1·09
Feb. 27-Mar. 26 ..	1·27	1·27	average
Mar. 27-April 30 ..	2·10	1·98	+ ·12
May 1-28	2·28	1·92	+ ·36
May 29-June 25 ..	1·04	1·89	− ·85
June 26-July 30 ..	1·20	2·83	−1·63
July 31-Aug. 27 ..	2·83	2·33	+ ·50
Aug. 28-Oct. 1	·50	3·00	−2·50
Oct. 2-29	2·61	2·69	− ·08
Oct. 30-Nov. 26 ..	1·79	2·53	− ·74
Nov. 27-Dec. 31 ..	2·02	2·73	− ·71
Total	19·02	26·62	−7·60

Fred Coventry.

Echoes from the Hives.

Durban, Natal, South Africa, December 17, 1898.—I forward herein my subscription to Bee Journal for 1899. We are having a wet, cold season, so I don't expect much of a honey harvest. This year's B.B.J. has been very interesting to us out here, who have no

chance of seeing properly-arranged apiaries, and I have got several "tips" from the illustrations of "Homes of the Honey Bee."—A. E. S.

[We have ordered Langstroth's "Honey Bee" for you, and will send it on by book-post on receipt.—EDS.]

Norwood, London, S.E., January 9.—Can any one remember such extraordinarily spring-like weather in January as that of the past two days? Yesterday (8th inst.) the thermometer standing at 57 deg. in the shade, sun bright and sky clear. Bees on the wing by hundreds, and hanging out in cluster as large as a cocoanut. To-day, again, thermometer 52 deg. in the shade, bright and clear. This is something like a record, I believe, and is about 13 deg. above the average for this time of year. —T. P. (Bee Blossom).

Doonfoot, Ayr, N.B., January 16.—Since my return to Scotland in the end of October, we have been blessed with anything but good weather. Nearly every day there has been more or less rain, sleet, or snow, always with a strong wind, which has compelled bee-keepers to see that their hive-roofs were properly fastened down. The bees have scarcely had a single flight since I came here, although there has been very little frost the winds have always been cold with scarcely any sun. This weather will try the best of hive-roofs, and the first opportunity should be taken to see that the quilts are dry. The weather at this season reminds me of a joke I heard some time ago. A Yankee was staying a fortnight in the town of Greenock. The whole time he was there it kept raining. Taking a walk one afternoon, he was surprised to come across an old man working away with his coat off. "Does it always rain here?" he asked him. "Na, na," replied the old man, "it sometimes snaws."—EXPERT.

Queries and Replies.

[2145.] *Transferring to Standard Frames.*—I have just had given me by my father an apiary of six hives. I have always taken great interest in bee-keeping, and as the stocks referred to have been very much neglected during the last few years, they consequently need a lot of improvements. In the first place, two of the stocks are in frame-hives with frames not of standard size, but considerably larger. I should be glad to know (1) How these could be transferred with the combs into standard frames? I wish to transfer all the six lots of bees mentioned above. I should also say that two of the hives are skeps into which the bees were originally put as swarms, but which have since had placed under them frame-hives not standard size. I therefore cannot, in these two cases, tell whether the queen is in the upper skep hive or below in frame-hive, while I have no idea whatever how to manipulate the bees. The last two hives are ordinary skeps, which I propose to drive according to directions in "Cowan's Guide Book," which I have bought and carefully read. 2. Lastly, how early in the year (provided the weather be fine and warm and I resort to feeding) can the bees be safely transferred to standard frames? Apologising for the length of my queries — C. A. ATCHLEY, *Willsbridge, January* 11.

REPLY.—1. Only by cutting the combs out and tying them into the standard frames, as directed in "Guide Book." 2. As soon in April as the weather becomes warm. But why not transfer as described by Mr. Trice on p. 25?

[2146.] *Preparing Bees for Wintering.*—I started bee-keeping last year by buying a stock in a frame-hive, and got about 30 or 40 lb. of nice section honey from it. So far as I know, no swarming took place. At the end of the season I merely took off the section-rack, replaced the quilts, and, covering up the outside of the hive as well as possible with garden matting, left it without further attention. No honey was extracted from the frames in brood-chamber, which, I think, are all full. Fortunately I got Mr. Cowan's "Guide Book" later on, and now know (1) how I *ought* to have "wintered" my stock, but as I am afraid my error may have already had disastrous results, will you kindly give me your opinion as to what is the best thing that can be done now? 2. At the same time, may I ask if there is any method of extracting honey from the frames other than by the extractor? 3. As to swarming, may I also ask if the swarm consists of the old queen and stock, leaving a young queen and young bees in possession of the hive?—"A NEW SUBSCRIBER," *Andover, January* 14.

REPLY.—1. If it is certain that there are plenty of stores in the combs no alarm need be felt, for although advanced bee-keepers generally agree that bees should be wintered on only so many frames as the bees cover at "packing" time, there are not a few good practical hands who do not practice contracting hives for winter at all. 2. Only the methods used before the extractor had been invented, viz., by cutting combs up and hanging before the fire to "drip" through a bag of flannel or open cheese cloth. 3. Yes.

[2147.] *Keeping Hives in Bee Houses.*—I keep my hives in a bee-house, 12 ft. by 8 ft. The bees are placed in two rows on each side —twenty-four hives in all. There is a window at one end and door at the other end. 1. Is this overcrowded? I find the bees fight a good deal and queens are apt to get lost. I therefore think of reducing the number of hives to sixteen. My hives are single walled, and for quilts I use unbleached calico next

frames and three pieces of old carpet above, but the bees soon eat their way through the calico. I believe that so much carpet is objectionable, on account of breeding moths, the place being so warm. 2. Is this so? I am about to try a single quilt to each hive covered by the old crown boards, which are an inch thick, and I will be glad if you can tell me (3) what sort of quilt would be best to use—some pliable stuff that the bees would not eat through easily. My trouble is with the wax-moth. From what I read in B.B. JOURNAL I do not think "celluloid" would do for quilts under wood, but will be thankful for your advice on the point. 4. In some of my honey in jars about a tablespoonful at top does not granulate like the rest. Is it too thin? And should I remove it in case it ferments? We have no Bee-Keepers' Association in our county, and, although keeping bees since 1887 and having every B.B.J. since then, I have never yet even seen a bee-expert. In fact, I am the nearest approach to one in my locality.—J. W. B., *Pembrokeshire, January* 14.

REPLY.—1. We think sixteen hives can be worked with more comfort and convenience than twenty-four in a house of that size. 2 and 3. The best covering next the top bars of frames is a piece of "American leather cloth" ("leather" side down), and above this any warm covering may be added. Warm coverings do not breed wax-moth, and strong stocks are rarely troubled with this pest if looked after, as all hives should be. 4. It is common to see a small portion of a jar of honey remain liquid for some time after the bulk has granulated. It will be safer to pour the liquid portion off if it is not to be used for some time. Pembrokeshire is a good bee-county, and we have known some very successful bee-keepers there. You could join the nearest County B.K.A.

Notices to Correspondents & Inquirers.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

*** Several correspondents having written us with reference to the non-issue of our contemporary the *Scottish Bee-Keeper* since November 19 last, we have made inquiry and are informed that, owing to the illness of Mr. Cassells, the Editor, some irregularity has occurred in issuing the paper in time.

We have now received copies of the paper dated December and January 7 respectively, in the former of which reference is made to the cause of delay, and also stating that "the Management have so arranged that in future subscribers will have the *Scottish Bee-Keeper* come wind or water."

We are very pleased to print the above explanation, and trust the Editor has so far recovered his health that no further breakdown will occur from the same cause.

*** We have been requested by the Hon. Secretary of the Essex B.K.A. to state that of the several candidates for the office of Expert to the Association Mr. A. Wittycombe has been selected, and will undertake the spring and autumn tours in due season.

J. E. (Callington).—*Dealers and their Customers.*—The firm you name is one of the oldest in the appliance trade, and do a very large business. We cannot understand the want of attention of which you complain.

T. HOUGH (Northwich).—*The "W.B.C." Hive.*—1. The latest and fullest description of this hive—with plans and measurements—appears in B.B.J. for November 3 and 10 last year. These numbers will be sent post-free from this office for 2½d. in stamps. 2. The Hon. Sec. of the L. and C. B. K. A. is the Rev. E. Charley, Ince Vicarage, near Chester.

VERACITY (co. Kilkenny). — *Combs from Diseased Stocks for Foundation Making.*—The amount of risk in using wax extracted from diseased combs has been discussed, *pro* and *con.*, without any unanimous or even general conclusion being arrived at. For ourselves, we think it advisable to use much care in keeping the wax at a temperature of 212 deg. for about a couple of hours before converting it into foundation without fear of *possible* infection.

LANCELOT QUAYLE (Isle of Man).—*Honey Samples.*—1. We cannot detect any appreciable "percentage of honey dew" in the dark honey sent. It is almost wholly from heather, and but for our fear that it will not keep very well—probably from being gathered when there was little dryness in the atmosphere—it would be a very fair sample of heather honey. The light sample is a very good honey for 1898.

E. PEACOCK (Cambridge).—*Suspected Comb.*—Comb contains no brood or trace of such, only honey (or syrup) and pollen.

A BEGINNER (Lamberhurst).—*Making Bee-Candy.*—A good recipe for this appeared so recently as our issue last week. See page 12.

MRS. DAWSON (Mullingar).—*Sugar for Bee-candy.*—If the sample sent is pure cane sugar it will do very well for candy making; but beyond advising inquiry from the seller as to its being cane sugar we cannot give any opinion.

Editorial, Notices, &c.

USEFUL HINTS.

(*Continued from Page* 21.)

WEATHER.—January 25, Hard frost!

SELLING HONEY.—This question is so full of importance to the industry of bee-keeping that no excuse is needed for continuing our remarks of last week on that subject. With regard to the "slow sales in 1898," alluded to on page 21 in "Notes by the Way," Mr. A. D. Woodley, of Reading, on another page of this issue, attributes it to the generally inferior quality of last year's honey crop. But, while admitting that a large portion of the ingathering is left on the bee-keeper's hands, he asserts that good honey of 1898 is almost unobtainable. It will be conceded that in his official capacity as hon. sec. of the Berks B.K.A., Mr. A. D. Woodley knows what he is talking about. Moreover, the letter quoted by us last week makes it safe to say that really good honey is scarce.

In view, therefore, of this admitted scarcity—and the knowledge that it is seriously damaging our trade prospects—how all important it is for every bee-keeper to look facts in the face and take a broad view of the exigencies of the case. In other words, how can we longer ignore the truth that the greatest of all difficulties encountered by those traders who desire to deal in British honey is the fitfulness and uncertainty of the supply? This is the *crux* of the whole question, and we got full and convincing evidence of the fact at the "Groceries" Exhibition in October last. On one of the days of that show the various representatives of the Press were invited to dine with the Directors, one purpose of the gathering being to discuss the aim and objects of the Association as regards extending the groceries trades and of benefiting producers, distributors, and consumers. As representing bee-craft we accepted the invitation and, in due course, we were invited by a Press-man to inspect a very fine display of honey made in the lower hall by one of the largest firms of packers in the country. Without dwelling further on details of our long conversation with the representative of the firm who had set up the display, we may sum it up by saying that we learned, of course—(1) that it was *not* British honey on which our admiration at its get-up was honestly expressed, and (2) that the reason the firm did not enter more largely into trading in the native product was the uncertainty of obtaining an adequate supply of British honey every year. "Why," said our informant, "we put up about ten tons each year!"

We ask our readers to just think of that, and then say what is the use of shutting our eyes in view of facts like these? And when well-meaning and good friends of "the cause" like Mr. W. Woodley write in our monthly, the *Record*, of November last, deprecating in strong terms what he calls the "clarifying" of honey that has granulated—in order to make it saleable as liquid honey—we can only call it shutting our eyes to an advantage to the honey selling trade which should be obvious to all who take into account the greatest good of the greatest number. We pass over Mr. Woodley's complaint against judges for attaching importance to brightness in honey on the show-bench, because, unfortunately or fortunately—as the case may be regarded—the Editors of this journal have been so largely implicated for some years past in the judging when called upon for it. Our friend remarks that it is rather too personal a matter for discussing here; but as we shall have to occupy more space next week with our "Hints," we just mention one fact by way of enforcing our side of the argument. And it is this:—

In the course of an interview held in this office with one of our leading honey-producers—of whom, we are glad to say, not a few favour us with a call when in town—the conversation turned on the question of selling honey, because of our friend having brought a sample for our opinion as to its quality. We carefully examined it on all points, *aroma included*, and pronounced it "excellent," and quite had the impression that it was the produce of the current season. "Now," said our friend, "that is honey of 1897! a fact which I thought would surprise you. Moreover," he continued, "I was applied to by a firm who wanted good honey in quantity, and I sent a similar sample to the one in your hand, saying

that I had 8 cwt. like it, for which I must have —— per dozen for in jars, and could take no less, seeing how scarce good honey was. The reply was, 'We will take the lot! at your price.' And so," said he, "I have been busy melting and bottling, and have got it off to the buyers."

(Conclusion next week.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

SELLING HONEY.

THE ROYAL COUNTIES SHOW.

[3556.] Your remarks in "Useful Hints" on p. 21 of last week's B.J., with regard to "Selling Honey," and the points raised by my relative in his "Notes by the Way," appear to be just a little contradictory; but I think the difference may be in some measure accounted for if we consider the character of the honey season of last year. There is, without doubt, still a considerable stock of honey on hand in many parts of the country, but the quality is so indifferent that holders do not care to offer it to customers for fear of spoiling their reputations, and traders are afraid to purchase other than from hand to mouth, so to speak, or else have been tempted to go in for foreign honey. On the other hand, it is well known that honey of first-class quality is very scarce indeed, so much so that until the new season's crop comes in I fear but little good honey will be seen. This brings me to the matter I had mainly in mind when sitting down to pen these lines, viz., to ask you to allow me to say a word to your readers on the shows of the "Royal" and the "Royal Counties." The former is this year to be held at Maidstone, Kent, on June 19 to 23, and the latter at Windsor on June 5 to 8. Now, it is obvious that if we have a late spring season similar to that of '98, both these important shows will see but a very short lot of new honey staged. For this reason I earnestly ask bee-keepers who still hold fine samples of 1898 honey by them to reserve some of it for these shows. The "Royal Counties" Show, from the fact of its being held a fortnight earlier than the "Royal," will probably suffer most in this respect and the Berks Bee-keepers' Association (who have undertaken to manage the bee department at the Windsor Show) are anxious to make a good display of honey on this occasion, especially as her Majesty the Queen is President, and the Show will be held under the shadow of Windsor Castle. They have specially framed the schedule so that it should attract honey not only of the current season but also of previous years, these latter are now in the printer's hands. I shall be happy to send a schedule to any of your readers on application. I would also with your permission draw the attention of manufacturers to the fact that this is an excellent Show for sales, and arrangements can be made for exhibits shown there to be sent on to Maidstone for the "Royal" at the close of the Show.

Trusting these remarks will be in time to secure a good display of honey at the two Royal shows, and that they may be worthy of the occasion.—A. D. Woodley, Hon. Sec. Berks B.K.A., 17, *Market-place, Reading.*

"HONEY SALES" AND "HONEY-DEW."

[3557.] Your correspondent, Mr. Wm. Woodley, writing of "honey sales," in "Notes by the Way," in B.J. of January 19, page 22, considers that owing to the public having been informed through the Press of our "takes" of honey-dew last season this may be a cause of slow sales. I notice that Mr. Woodley writes of honey-dew as "this aphidian secretion." In the article from the *Pall Mall Gazette* in the Bee Journal of January 5 and 12, honey-dew is also said to be a secretion of the aphis. On a previous occasion when we had a similar plague I was able to satisfy myself that when we get a regular crop of honey-dew this saccharine substance is not the excreta of the aphis, but is produced under certain atmospheric conditions, either exuding from or forming upon the leaves of trees. My observations last season fully confirmed the opinion I formed on the previous occasion. That the excreta of the aphis is very like honey-dew and that it falls from trees and plants infested with aphides is well known to gardeners, but if the two substances are tested I think they will be found to differ considerably. I ask those bee-keepers who believe honey-dew to be the waste discharged by aphides, Do you sell such stuff to your customers for their consumption or even feed back to your bees what you believe to be the excreta of another creature? Honey-dew is quite wholesome, but should be sold as honey-dew and at honey-dew price. There is a very short supply of jam on the market and this is in favour of honey sales. I will mention two hindrances to selling honey—one is the influence on sales of a class of bee-keepers who are not dependent upon their bees, who take very little trouble with their honey, and con-

sider nobody else's interests; in fact they really do not consider even their own, seeing that they all but give their honey away. When we see this done can we wonder that nobody can afterwards get a reasonable offer. The other is the beating down price of that much-abused—and often rightly abused—individual, the middle-man.

I am afraid the time is not far distant when the cottager who lives in a thinly-populated district, and cannot sell at home, will have to look to something else than bee-keeping for his rent. Who pockets the profits of bee-keeping when the middle-man will only give the usual price of foreign honey for the best English? Not the consumer, certainly, for this third party gets very little more for his money than formerly. And the poor bee-man gets even less money now than he did when large numbers of them kept bees in the straw skep. Many middle-men will not buy small quantities of honey, so small producers must join forces to make up ½ ton lots where a difficulty is experienced in selling. I once offered a large dealer in honey a parcel at a fair price, and the reply I received was, "You ask too much; we are buying tons of the best English honey at what works out at something over 4d. a pound." It is a common practice now to offer 3d. for any article for which 4d. is asked, even though it may be worth 6d. This practice is creeping into the honey trade. That noble animal, the horse, is often placed in a bad light by underhanded practices. Have bee-keepers to submit to the same genteel forms of dishonesty? I hope not.—Wm. Loveday, *Hatfield Heath, Harlow, Essex, January* 21.

HONEY-COMBS HIDDEN FOR FIFTY YEARS.

[3558.] The fact of the discovery of honey-combs in the middle of an elm-tree, as narrated by your correspondent Mr. Loveday on page 26 last week, is certainly most interesting. I think, however, that his suggestion of their having been entombed for half a century is hardly tenable. It is probable that many of the fifty rings of annual growth were laid down before the entrance was closed. Even though the entrance was "absolutely obliterated" it would not be safe to conclude that the closure of its edges had not been of much more recent date than fifty years, because the pressure of yearly growth would operate continuously, and new material would be more easily forced into the hollow tube-like entrance from there being little resistance to it. A very careful section along the line of the entrance would probably reveal traces of the junction of the sides between two particular points. Elms often decay in the centre of the trunk, but between the dead parts and the bark will be found some inches of sound wood. Allowance for this must be made in estimating the period which has elapsed since the entrance-hole was closed. Possibly the bees died in some season of scarcity of honey or of extreme cold.—W. H. Harris, *Oberlin House, Ealing Dean.*

BUCKWEED HONEY.

SEEDS FOR SOUTH AFRICA.

[3559.] Referring to Mr. A. C. Sewell's letter from Durban, Natal (3487, page 486), in B.B.J. of December 8 last, I write to say that I have sent him out the following seeds, given me expressly for him to try by Messrs. H. Cannell & Sons, of Swanley, Kent, and as likely to be useful as bee flora. First the Cannell's *Reseda Alba* he asked for, and the following in addition: *Limnanthes Douglasi, Calliopsis Tinctoria, Mathiola Bicornis, Hesperis Matronalis Candidissima, Helenium Autumnale Superbum*, and seed of Chapman's Honey Plant sent by Mr. H. W. Brice. I have told him what opinion we had formed as to the sample of buckweed honey which he was good enough to send you, and which is quite distinctive in flavour from any honey with which we are familiar in this country—the colour too dark for preference as a sale honey, the consistency thin, and the aroma, though aromatic, is not actually agreeable. I only hope, after the trouble he has taken, that he will not be disappointed with our adverse verdict. We thought his ingenious package for the bottle (a joint of bamboo) looked as though honey might also be sent in it without any other vessel, provided the open end of the bamboo could be securely corked or tied over (?)—E. D. Till, *Eynsford, January* 19.

"WIRING" FOUNDATION.

IS THREAD PREFERABLE TO WIRE?

[3560.] No doubt many of your readers who use whole sheets of foundation find, as I did myself, that it often warps and bends in such a manner as to produce very clumsy, uneven combs. I read all about wiring, and determined to try it, but a friend of mine who has kept bees for many years said that in his opinion the wires were very injurious to the brood, so I began to hunt around for a substitute. This I found in ordinary white sewing cotton. My method of fixing is as follows:—I first bore two holes side by side, about one-sixteenth of an inch apart, in the centre of each side-piece of the frame; next I fit the foundation in the ordinary way; finally I thread the cotton through the holes, so that there is a piece each side of the foundation, drawing it backwards and forwards so that it slightly cuts into the wax, then tie the ends, and the job is done. I find the bees do not gnaw through the cotton, at any rate not until they have drawn the foundation out sufficiently to hold it firm. The cotton cannot have any ill effect, and I think if any of my fellow bee-

keepers try this plan they will be very pleased with the result. I find that an additional set of cottons near the bottom makes it still more secure, although I do not consider this necessary.—"A COCKNEY BEE-KEEPER," *Jan.* 22.

WEATHER RECORDS.

TEMPERATURE FOR JANUARY.

[3561.] In reply to "T. P. (Bee Blossom)," who writes in B.J. for January 19 (p. 29), I copy the two following letters from Symons's *Meteorological Magazine* for February, 1898, Vol. xxxiii., pp. 5 and 7 :—

"SIR,—We must go back a great many years to find such a minimum as we recorded last week, viz., 51°; in 1852, on December 27, we recorded 52°, and in 1851, on January 2, 51°. This time last year our roads were blocked with snow, and they were literally quarrying it out.—Yours very truly, W. LUCAS, *The Firs, Hitchin, January* 24, 1898."

"SIR,—The following may interest your readers:—1890, January 5. Max. recorded temp., 63°.

MEANS.

"Max. 49°·0. Min. 37°·2. Mean of means 43° 1. 1898, January 20 and 30, mean temp. 56°.

MEANS.

"Max. 48°·1. Min. 34°·3. Mean of means 41° 2. Three nights over 50°. Fourteen nights over 40°. Nine nights under 32° or upon it. Averages for previous ten years : Max. 42° 8. Min. 31°·7. Mean of means 37°·2.

"I found geraniums in blossom out of doors in the Conway Valley last month, also hydrangea 600 ft. above sea.—Yours faithfully, R. J. ROBERTS, *Pool Inay Vicarage, Welshpool, February* 2, 1898."

I think it might be well to have the above in your pages for general reference as to "Records."—F. COVENTRY, *Duddington, Stamford, January* 20.

BEE STINGS

AND SIMPLE REMEDIES.

[3562.] I see an inquiry on page 27 in today's B.B.J. about a cure for bee stings. Three years ago I read somewhere that common washing-soda is useful, and soon had an amusing test of its efficacy. A gentleman was standing in front of my hives, when the bees "went" for his head (he had just had his hair cut and shampooed with some scented wash), and when he brushed them off, they stung his head in various places. I promptly applied soda. He had to leave for London within an hour, and wired me to say that he never had either pain or inconvenience. The same summer my small child and grandchild accidentally disturbed a wasps' nest, and were furiously attacked on legs, arms, and heads, their long hair being full of wasps. As soon as they reached home we put them into a large bath full of warm water and soda. When the doctor arrived he said that nothing could possibly have been wiser, as the soda neutralised the acid of the stings (I suppose bees' stings are similar to wasps'). Fortunately, the children's eyes and mouths escaped, though their screams kept the latter wide open. They were well next day, though the sting marks were visible for some days. Could the soda have been applied at once, this would probably not have been the case.

May I thank you for the help given me by the B.B.J.? My devotion to the bees is a family joke, but I find the honey goes very fast, in spite of jeers. Bee-keeping is the most delightful and health-giving recreation. —M. S., *Durham, January* 19.

EXPERTS' CERTIFICATES.

PROPOSED SECOND-CLASS EXAMINATION.

[3563.] May I suggest the idea of having an examination for second-class certificate, say about the end of March? The reason why I mention the matter is because there is so much to do in finishing up bee-work at the end of the season that it does not give one a chance of reading up. The quiet season being advantageous for study gives would-be candidates time to prepare for it.—THIRD-CLASS EXPERT, *Wolverhampton.*

BEES IN LONDONDERRY.

[3564.] As I am forwarding subscription to B.B.J. for 1899, I thought it might interest some readers to know how the honey-bee succeeds in Londonderry. I am myself well satisfied with results, as the following statistics will show :—In 1897 from eight hives I got 142 lb. of surplus; in 1898 twelve hives yielded 610 lb. The large increase for 1898 was, I believe, greatly due to my starting to read the BEE JOURNAL in the latter year, and later on carefully reading the "Guide Book." Anyway, the year 1897 was a better honey year hereabout than 1898.

I began this year with eight stocks, seven in frame-hives and one a straw skep. The latter I transferred into a frame-hive by placing the skep on top of frames with full sheets of foundation, as recommended in B.B.J. I packed my hives well last winter, and as they all came out strong with plenty of stores I have done the same this winter. I began to give sections on May 18, but it became cold and wet, and bees made no headway during May and June. In July they did better, and I began to remove sections. August was a very good honey month. I got my first swarm on June 11, and this gave me forty-five 1-lb. sections. The second, issued on June 17, yielded fifty-six 1-lb. sections. My third of June 24, and fourth of July 8, yielded eleven

and thirty sections respectively. These results were from swarms only. Isn't fifty-six 1-lb. sections a good yield for a swarm of the current year? Has any reader of B.B J. had greater success.—DAVID T. RITCHIE, *Londonderry.*

TITS AND BEES.

CURIOUS PLACE FOR NESTING.

[3565.] I enclose photo of a blue tit's nest built above the quilts in one of my hives. Thinking it might possess sufficient interest to

Bird's Nest under Hive Roof.

readers of the BEE JOURNAL to warrant its insertion, I send you particulars. Unfortunately, the old bird flew off as the nest was being photographed. We spent half a day trying to get the mother bird sitting on the nest, but probably the camera looked too much like a gun for her strength of nerve, and we were unable to get her there. The young birds were hatched out at the time.

Probably some readers will wonder at me harbouring these birds, as I believe they are generally included among the enemies of bees, and persecuted by bee-keepers accordingly. This is the third year these wonderful little birds have built in the roofs of my hives. Indeed, in my opinion they do the bees a good turn, for they never cease carrying in moss and wool until they have the whole top of a hive covered thickly as seen in the photo. They had thirteen little bird chicks in it at the time it was photographed, and although I lifted the top quilt (nest and all) and put a rack of sections underneath, the birds never left it. They carried the whole material through the ventilation holes in the hive roof, which were not covered with perforated zinc in the usual way. The tits worked as busily as the bees themselves, what with building, hatching, and feeding the little ones.

I have watched the tits many times, and have never yet seen them feeding on bees. Swallows, on the contrary, do carry off bees, as I have watched and caught them feeding the young swallows with them.—S. CRAWFORD, *Lisnacloon, Castlederg, Ireland.*

WHAT HIVE TO USE.

SOME REFLECTIONS BY A BEGINNER.

(*Concluded from page* 27.)

[3566.] Another point I wish to ventilate. We will soon be having—both in editorials from yourself and in letters from "the trade," strong reminders to buy our bee-goods early. We will also get many grumbling letters from those who have not done so, and who have been kept hopelessly waiting, in consequence. Now, I do feel, as a beginner, that this is a great grievance to us amateurs, who do not and cannot know, until experience teaches us, what we do want, and, in consequence, are kept waiting by tradesmen, who ought themselves to know by experience when, and to what extent, the rush of orders will come in. It is the only trade I know where the seller has the face to expect his customers to tell him beforehand what they will want; and in our case—I speak for us novices—we do not know, and the tradesman loses what might turn out afterwards to be good customers by the fearful delay in supplying the most simple and absolutely necessary articles, and thus frequently putting back a beginner to so late a date that he is unable to make a success by having everything *en train* at the proper time, and perhaps even disgusting him for good in consequence.

One or two more notes about things which I *imagine* are "useful hints," and which I have found out for myself.

Use carbolic cloths on rollers the same width as a standard frame. Two of these, one unrolling as the other is rolled up, keep bees *very* quiet and "piano"; care must be taken, of course, not to have the carbolic too strong.

Crown boards ventilated with big augur holes are excellent things on W.B.C. hives to keep the quilts neatly down while you are taking off the outside lifts.

I intended to have been less long-winded, but points and queries keep turning up in my mind as I turn over the leaves of my note book. If I have not exhausted your patience I will still return to the charge. Why are skep bees so much quieter than those in frame hives? Does over-manipulation tend to make bees savage? I found that in driving skeps I was soon able to dispense with a veil, at first I confess, with some trepidation. I have a kind and useful neighbour who keeps a mild tempered swarming sort of bee and who frequently lets his swarms go free or gives

them away. I come in here! Last season, curiously enough, I only had two swarms myself —one weighed 8 lb. and the other 8½ lb. One old lady that I drove bees for was most grateful and refused the money I offered her for the bees that I was carrying away!

Is there any fear of introducing foul brood into one's apiary if you keep the driven bees three days starving, and kill the queen before uniting? I have been offered the chance of driving bees for several skep bee-keepers this next autumn. Unfortunately, I found out the district (in Essex) when most of the bees had already "paid the penalty." I know they have had foul brood in those parts lately. One skep I lifted I found to be quite empty of bees, but the top (roof) of the hive was a mass of cocoons of some insect; the dead larvæ look just like immature bees, and were about the size; but they were all dead, and I have no idea what killed them or what they were.

The cocoons were made of very tough material, nearly white, and about an inch long. They were affixed horizontally and circularly to the roof of the hive, and were in lumps perhaps fifteen or twenty deep. It puzzled me to understand how the inside larvæ were expected to "win out."

To finish this long rigmarole, I would like to draw all beginners' attention to that most amusing and instructive letter by the Rev. E. T. Abbott, taken from the American *Gleanings*, which appeared in the B.B.J. of the 4th inst. Long did I chuckle over it.

You will notice that I have interlarded this screed with questions: will you think it worth while to give a short criticism on the whole with answers to the conundrums?—MILITARY BEE, *Ainsdale, Lancs., January* 13.

[Injudicious over-manipulation is a frequent cause of bees turning irascible and vicious, and, *per contra*, it often happens that skeps are never lifted from their floors after hiving until the last "lift" which precedes lowering them into the sulphur pit! But we have known very cross-tempered bees in skeps. Regarding foul brood and driven bees, we advise a careful "look out," and if the combs look suspicious, to have nothing to do with them. As to "mass of cocoons," we strongly suspect them to be the larvæ of the wax moth. If you send us a sample, we will decide the point for you.

Thanks for offer of future notes; they will be very welcome.—EDS.]

A LADY BEE-KEEPER'S EXPERIENCE.

[3567.] I have never given you any account of my bee-keeping before, but thought you might like to hear how the bees do so near the sea. My first hive was given me in October, 1893, and ever since I have been gaining knowledge and enjoying my work amongst the bees. I will give you a very brief account of the work in my apiary for 1898.

I began the year with two single hives (one of which was a "W.B.C.") and one double or "Wells" hive (the first time of trying it). I fed all my stocks until the middle of May owing to bad weather. On June 29, the "W.B.C." hive sent off a large swarm which I put in a single hive, and fed until the bees had built out the foundation. The same hive also sent out a large cast on July 7, and not being able to find the queen we returned the bees, but they came out next day and again we missed the queen, but on the cast coming out again on the 9th her majesty was caught! Before returning the bees we cut out two queen-cells and left two on the combs. Next morning I found a young queen turned out, so that ended their swarming fever. I think the "W.B.C." hive has rather a tendency to make the bees swarm, or perhaps, my management of it was faulty? However, I only got 7 lb. of honey from that hive. The other single hive gave me 36¼ lb. extracted, and the "Wells" gave me 111¾ lb. extracted, my total weight of honey being 155 lb. I only had 1¼ lb. of wax from the cappings, which I sold very quickly at 1s. 9d. per lb. After doing so much better with the double-queened system I decided to do away with my single hives and get another "Wells"; and as I had lost one of the stocks from the east end of the "Wells" hive I had just enough stocks to go into winter quarters with two "Wells" hives.

I am sending you a sample of my honey and wax, and am very glad there was no honey-dew gathered by my bees this year as so many have been troubled with it. If you think it worth noticing I should like your opinion of samples please in B.B.J. I have sold £3 4s. 5d. worth of honey and have still nearly 60 lb. left, so I think bee-keeping is quite satisfactory, besides being a great pleasure. — JESSIE ROWLANDS, *Blundellsands, January* 14.

[Both honey and wax are of very fair quality, indeed, for so poor a season that of '98 was in Lancashire, and our correspondent has done very well to secure such bee produce. The honey, though not of very high grade, is "redolent of the hive," and of fairly good flavour, while the wax is cleanly extracted and has a homely honest look that bespeaks it genuine. We must caution our correspondent against undue haste in discarding single hives for double ones after only one season's experience of the latter. Published reports in our pages point the opposite way and we advise further trial before relying solely on double-queened stocks.—EDS.]

PACKING SECTIONS FOR TRANSIT.

CURING FOUL BROOD.

[3568.] Referring to the question of packing sections in "Notes by the Way," page 483, would Mr. W. Woodley kindly give us more details as to his method? I would ask (1) Does he first pack the sections in a light

wooden box, making a close-fit by means of slips of wood, to keep them together and protect their faces from the hay packing? Or (2) Does he wrap each section up in paper (oil or plain) and then bind them together with thin veneer separators between their faces, and also with thin boarding to protect their outer faces? Then, do I understand rightly that he places this bundle of sections (or light box, if the first supposition is the right one) into a larger box? Also (3) what thickness of hay, when compressed, does he consider "a good cushion"? (4) If he never packs hay on the top as well, has he never had the boxes turned upside down, and had the sections injured in consequence?

Curing Foul-brood.—Dealing with this subject your correspondent, "G. Sawyer," in B.J. of December 22 (3517, p. 508) says: "The bees under treatment remain on the starters for three days." Will Mr. Sawyer kindly say if he confines them to the hive during that period?—G. M. S., *Keswick, January* 22.

ANOTHER OPPRESSED BEE-KEEPER.

[3569.] By way of offering a word of comfort to my fellow sufferer, "An Oppressed Bee-Keeper," 3502, p. 494, I would ask him to bear in mind the old saying about "one-half the world not knowing how the other half lives," nor does that half know what we poor men have to put up with. Why, I have to sit in a chair when I come in the house and smoke my pipe while my wife scrapes my shoes and brushes the dirt off the soles before I enter the sitting-room, and yet there is no "rosemary" in *my* garden.—An Old Bee-Keeper, *Steeple Aston, January* 19.

OLD-FASHIONED WINTERS.

[3570.] An old-fashioned winter, according to the common idea, is one with plenty of frost and snow; but in December, 1681, rye and wheat were mown near Oxford, and in December and January, 1681-2, garden peas were in blossom in that city; so that the old bee-keepers of that time no doubt watched, as we do this season, the little toilers eagerly rushing out in the bright sunshine; only we are minus the blossoms and get tremendous downpours of rain instead.

In those long gone days the straw thatch and bee-pans kept the skeps of our forefathers dry and warm. This winter of '98-9 will no doubt find out the leaky roofs without any mistake, so that all shaky joints or ledges will be saturated with rain, and the slovenly ones will sigh and moan, and resolve next autumn to have brush and paint used in right good earnest before the wet sets in. But I suppose there would be procrastinatory and slovenly bee-men 200 years ago just as there are to-day. —John Kibble, *Oxon, January* 16.

"NOTES" AND "QUERIES."

[3471.] *Returning Second Swarms.*—Replying to our correspondent, Miss M. Moscrop, whose queries appear under the above heading on page 28, we would say:—1. If a second swarm or cast is retained in the hiving skep for about eighteen hours, then returned to the parent hive, the chances are (judging by our own experience) about ten to one that the swarm will not again issue, but that the strongest queen will remain and the others be cast out dead. 2. The old queen always issues with the first or prime swarm. 3. We gladly correct the printer's error on page 28, which locates you at "Cumberland" instead of *Cleveland*, Yorks.—[Eds.]

METEOROLOGICAL

Observations taken at Duddington, Stamford, Northants, for the Week ending Jan. 21, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Jan. 15....	29·80	38·0	54	34	20	44·4	·44
,, 16....	29·22	47·8	49	38	11	43·7	·06
,, 17....	29·81	32·0	47	31	16	39·3	·21*
,, 18....	29·63	46·7	51	31	20	41·4	·01
,, 19....	29·41	51·0	52	41	11	46·7	—
,, 20....	29·60	44·8	55	40	15	47·8	·17
,, 21....	29·30	53·1	55	43	12	49·2	·10
Means	29·55	44·8	51·9	33·9	15·0	44·7	·99†

* Snow and rain. † Total, ·99.

Mean vapour tension, 0·245 in.; mean relative humidity, 81 per cent.; mean temp. of the dew point, 39°·2. The week's rainfall, viz., ·99 in., =22,396·77 gallons, or 99·99 tons to the acre, or 4·95 lb. to the square foot. For the week ending January 14, the mean temp., viz., 42°·5 (not 42°·4 as sent in error), was + 6°·3, and the rainfall, viz., ·85 in., + ·45 in. The rainfall, January 1 to 14, viz., 1·31 in., is + ·47 in.

Fred. Coventry.

Queries and Replies.

[2148.] *Dead Bees Found Outside Hives in Winter.*—I shall feel greatly obliged if you can kindly tell me what is the matter with the bees I send herewith. On August 24 last I put four driven lots of bees into a frame-hive, giving them four frames of comb, containing some honey and pollen, also three frames of foundation which they worked out. They were given 22 lb. of syrup made of Tate's No. 1 sugar, according to Recipe No. 7 in "Guide Book," but without naphthol beta solution. On September 30 they were packed up for the winter, a division board with bags of paper being placed outside each of the outer combs. They also had winter passage above frames, and six or eight woollen quilts placed above, which latter are now warm and dry. From the end of November until the present time,

every day that the bees fly, I find from twenty to thirty dead or dying bees on the ground. One day last week I counted fifty. On December 9 I peeped into the hive and saw that some of the cells at the top of the frames were not sealed and the syrup was candied. If I warm the bees in the greenhouse, some of them fly and return to the hive, others pass a liquid, dull yellow motion, which, under the microscope, reveals different forms of undigested pollen-grains, some nucleated cells which look like epithelium, and a few rhomboid and triangular crystals. I have seen only two of the yellow motions on the ground in front of hive but none on it. Sometimes bees are turned out of the hive alive. The abdomens of the bees appear distended and elongated much more so when alive than now. I observe that the "Guide Book" describes healthy excreta as dark brown; of dysentery, dark and muddy; so I presume that the yellow excreta is abnormal. Among the bees I send is a young one cast out of the hive alive on Saturday last, so I presume, owing to the very mild weather, the queen began to lay on January 1.—G. F. O'FFLAHERTIE, *Jan.* 23.

REPLY.—In giving a general reply to the above we would first say the dozen dead bees received show no signs of abdominal distension or of death resulting from dysentery. Nor is there anything either abnormal or unhealthy in bees voiding "yellow excreta." For the rest, we may safely ask our correspondent not to feel any alarm at finding a few (or even fifty) dead bees outside the hive at this season. Indeed, it is a curious fact (well known to experienced bee-keepers) that hives which appear to suffer enormous losses of bee-life in winter frequently "pull-up" in spring so rapidly as to exceed in population other colonies which have been comparatively free from such loss. It is also quite natural to find a good percentage of dead bees carried out, many of which have died in the ordinary course, or may have simply died of old age. Should actual signs of dysentery be found later on, full directions for treating it will be found in "Guide Book"; but, so far as the present, the baby-bee hatched in January and quilts over brood-nest which feel "*warm* and dry" are fairly good signs that the stock is now all right, and will probably do well.

[2149.] *Making Winter Stores Safe.*—I have two average stocks of bees, both of which I consider had about 30 lb. of *sealed stores* at the end of September. Having seen it suggested in "Useful Hints" last week that candy should be given at once, owing to the large consumption of food consequent on the very mild weather this winter, will you kindly inform me—1. If you consider 30 lb. of stores from September (as given in "Guide Book") ought to be sufficient to last to the end of February under the present circumstances, or would it be advisable to give candy earlier? 2. How soon ought flour or pea-meal candy to be given?—T. W. S., *Surbiton, January* 21.

REPLY.—1. If it is certain that the bees had the amount of sealed stores at date named they will not be in want, but it may be well to give a glance beneath quilts to make it quite safe so far as possible robbing in autumn last. 2. If want is imminent soft candy should be given at once, but no pea-flour till March.

[2150.] *Bee-Keeping as a "Hobby."*—Would you kindly tell me whether bee-keeping is a hobby that ties one very much? I should much enjoy the study of bees, and would long ago have commenced it, only I feared to do it badly. I am obliged to go away occasionally, for two or three weeks, and therefore ask—(1) can the bees do without attention for so long? In the spring I am often away for a month, but I could manage to get back by the beginning of April. (2) Could one count upon the bees not swarming until then? and *if* they swarmed, (3) Would there be any damage done beyond the loss of the swarm? I would love to study the keeping of bees, but am sadly afraid my life is not regulated for it. I ought to say though—except for the few weeks they would be neglected while I am away, they would be most carefully and regularly looked after for the rest of the time. I have read Mr. Cowan's books upon bees and taken in the JOURNAL for some weeks, and I do not wish to give the idea up without reason. Surely many of your readers who are bee-keepers must go away occasionally at certain seasons of the year? Some, no doubt, will shut up their houses and go away to the seaside, and so I ask (4) how do *they* manage? I suppose they delegate their duties to others, while I have no one who would undertake them. The question, therefore, for me is must I wait until I can never leave home before I can keep bees? Please excuse my ignorance. If you would kindly say a few words through your JOURNAL I should be so grateful to you.—O. C. G., *Abergele, N. Wales, January* 21.

REPLY.—1. Provided that only a few stocks are kept bees need but little attention, while any anticipated absence for a week or two at given times may be provided for in advance. Nor is much attention of any kind necessary before April sets in. 2. Swarms so early as the beginning of April are rare and need not be taken into account. 3. No. 4. Many who keep bees on a large scale possess apiaries some miles away from home, where for a few weeks in the busy season the help of a cottager near is usually secured to see after hiving swarms, &c. After June is past, however, bees will look after themselves fairly well until autumn feeding begins, so that absence earlier on need not be taken into account so far as deterring any one from keeping bees.

[2151.] *Moving Bees: Choosing Location for Hives.*—I have been a reader of your paper for close on a year, and as you reply to questions should like to ask:—1. To what age should a

queen be allowed to live? I have a neighbour who seriously tells me queens "should not live more than ten or twelve years." 2. If I bought a stock of bees about the middle (or end) of March, could I bring the hive three miles to my home without loss of bees? 3. On selecting a location for hive stands, which would you prefer? (*a*) On one side of a tall hedge, the hives facing south. Sheltered from all winds but that from the east. Nothing to interrupt flight for ten or fifteen yards, except to north. Fairly secluded. Or (*b*) in centre of garden open on all sides except on the west only, but having an uninterrupted flight on all sides? Secluded, highway twenty yards to west. Both positions would catch early morning sun in summer. — H. A., *Blackpool, January* 19.

Reply.—1. Two years is the generally accepted limit to which a queen is allowed to live by advanced bee-keepers. If left alone they seldom live more than four or five years. 2. Yes. 3. While both situations are good we should prefer the one under the sheltering hedge.

QUEEN-REARING.

WHAT SIZE OF FRAME TO USE.

A correspondent requests that I give my views regarding the size of frame that it is best to use when rearing queens. He wishes to rear queens next year, and is undecided whether to use the regular size frame or make a smaller size especially for that purpose. And, as he wishes to make the preparations this winter, he is anxious that what I have to say will appear during the winter months, so it may be of use to him.

This may appear to be a matter of no general interest, but when it is fully understood that those who rear their own queens for general use in the apiary are the most successful honey-producers of the world, I think more interest will be taken in this part of our pursuit. There is scarcely an apiary in the land but what its owner realises that he has in it one or two queens of more than ordinary value, but fails to breed for these valuable qualities because he does not understand queen-rearing; and so he lets the "goose which lays the golden egg" die without any special value to his stock accruing from her life, because he is not informed in the queen-rearing branch of apiculture. No person is an accomplished apiarist until he becomes a thorough master of the queen-rearing part of the business. With these few words regarding queen-rearing in general, I will now write regarding the size of frame which should be used, according to my ideas, based on nearly thirty years' experience.

During these years of trial as to the best size of frame to use in queen-rearing, I have failed to find any special advantage in a small frame, while there are many disadvantages; therefore, I have come to the conclusion that it is best to adopt the same size of frame in all nucleus hives, that fit the hive which is generally used throughout the apiary. As we are accustomed to handling these frames we can manipulate them more rapidly, and with less injury to the bees and combs than we can those of an odd size, thus saving time in our work, and avoiding that irritation to the bees which causes them to annoy their keeper by following him around and trying to sting him and everything else that happens to be near the hives.

With me it is much easier and more expeditious to handle one or two full-sized frames than three or four small ones. The bees also work more to our profit where the regular size of frame is used. Besides any comb is built by the nuclei is in just the frames we want it, and always of the size of cells we wish, as these small colonies build only worker-comb where the young queen is left long enough for them to build comb. Where I have had combs in which the mice had gnawed holes, or where the bees have left holes in them after my cutting out moldy pollen, or removal of drone-comb of more or less amount, I always use them when forming nuclei, and as soon as the young queen commences to lay, the bees will build comb and repair these places, if honey is coming in from the fields, or if fed when no honey is to be obtained.

By leaving the young queen with them the length of time required, we have our combs all made as good as those built out on foundation, save the cost of foundation and the fuss of putting it in the frames, while such mutilated combs are just as good to form nuclei with as whole combs.

By a little looking over our combs each year, sorting out those not quite up to standard, and using them as above, every comb in the apiary can be kept in perfect order for all time, unless the cells should become so filled with cocoons as to become too small to rear bees in—a thing which has not happened in my apiary during the past thirty years.

Again, if we use the regular size of frames, the honey stored in these will be available for giving to any colony in the apiary, either for spring, summer, or winter use, so that we do not have to store away a lot of combs and honey at any time of the year because of its not being in shape for use.

In the same way, I would always use the regular size hive for nuclei. Because by so doing we have nothing which will be a loss to us, and by using the ordinary hive we are ready to unite for winter on any stand we desire, without changing hives or anything of the kind, and we can build up any nucleus into a full colony at any time.

But the greatest advantage in using an ordinary sized hive for both purposes is felt in not having our nuclei robbed out occasionally, as is almost sure to happen with some of the weaker ones, where small hives are used. Such robbing causes a general demoralisation

of the whole apiary, often to so great an extent that the bee-keeper almost wishes he had never known such a thing as a bee. By using the regular size hive, and placing the nucleus on one side of it, while the entrance is at the other side no nucleus large enough to hold a queen to advantage will ever be robbed out, and smaller than these should not be used.

To help the reader to understand better, we will suppose that the ordinary hive used is 14 in. wide inside; that the entrance is cut from the front board at the bottom, the whole length of it, and that the hive fronts south. Form your nucleus on the east side of the hive, using two combs, one of honey and one of brood; and next to these combs draw up the division-board or dummy, which should allow the bees to run under its bottom. Now reduce the entrance to 1 in. in length at the west side of the hive, and you will have it as I use them, and I have not had a single nucleus robbed since I found out this plan.

Again, suppose I wish to form a nucleus in the next hive on the same row in the apiary. In this hive I place the two frames and dummy next to the west side of the hive, while the entrance is on the east side, the conditions being the same as relating to the prevention of robbing, while the doorway to each hive is not at all similar. The next hive is fixed like the first, and the next like the second, and so on to the end of the row. In this way the young bees do not mix; and no queens are lost in returning from their wedding-flight by entering the wrong hive, as often happened when I used an entrance in the same place with all the nuclei in the apiary. I consider this far preferable to painting the fronts of nuclei of different colours, or laying sticks of wood about them, as has been recommended so many times in the past.

If the nucleus becomes stronger than is profitable on the two frames, draw back the division-board and give them an empty frame with a starter of comb foundation, and see how quickly they will fill it with beautiful worker-comb. If too weak for the two combs, take away one and move the division-board up so that it is suited to the wants of the little colony, thus always working to the best advantage, and making everything done by any or all count on the right side of the ledger page.—G. M. Doolittle, in *American Bee Journal.*

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

"Hartwood" (Leyland).—*Size of Frames for Hives.*—This journal is so entirely opposed to the advocacy of any thing tending to minimise the obvious and immense advantage conferred on the bee industry of the country by the introduction of a standard frame that we do not care to give space in its columns for correspondence written with with that object. Besides, we ask, what comparison is there between the views either of "Amateur" or of one who is so ill-informed on the subject as not to know the correct measurement of the B.B.K.A. standard frame and the matured judgment of some of the most experienced bee authorities of the day? Seeing, also, that the paper referred to by our correspondent takes an entirely opposite line to ourselves, while its editor makes no secret of his opposition to the B.B.K.A. standard frame, we think the matter will be more at home in the pages of our contemporary than in ours. We therefore hope to be pardoned for respectfully declining the proposed discussion while freely acquitting "Hartwood" of any but the best motives in discussing it.

F. E. P. (Haverstock-hill).—*Using Granulated Honey in Sections as Bee Food.*—It will not do to give bees granulated honey in comb. No doubt they would consume a good portion, but our own experience goes to show that a great percentage of the larger granules will be cast out by the bees and found covering the ground in front of the hives being fed. We advise liquefying the combs by slicing them up and placing in an earthenware vessel immersed in hot water until combs and honey become melted. The wax will then rise to the surface and when cold may be lifted off in a solid cake. The honey may then be used for the table or as bee food as desired.

C. Gould (Guernsey).—The paper on "The Honey Bee," referred to as read before the Devon Gardeners' Association by Colonel Walker, president of the Devon B.K.A., was not read by that gentleman owing to severe indisposition. Mr. J. W. Jacomb-Hood (an active member of the Associations Executive Council), however, delivered an interesting address on bee-keeping to the members of the Association on the occasion mentioned.

F. W. M. (Sompting).—*Langstroth on the Honey Bee.*—We know of no house in this country who stock this work. It may, however, be ordered from this office, price 6s. post free.

G. M. M.—We are sending letter along with others to the dealer referred to, but fear your sample will be too dark in view of the fact that unsold dark honey is over-plentiful just now.

Castleman Brown (Maidstone). — *Giving Honey as Bee Food in Spring.*—In thinning down old honey for use as bee food, it should not be "boiled" at all. Simply add hot water in sufficient quantity to reduce the honey to the consistency of good syrup food, and—if used in early spring—give it to the bees while warm. In medicating the food measure the N. Beta in the proportions as directed in "Guide Book." Approximately, you might say 7 grains N. Beta to a quart of food stirred in after removal from fire.

Editorial, Notices, &c.

USEFUL HINTS.

(*Concluded from page* 32.)

ERRATA.—In our "Hints" last week (p. 31), second column, beginning 32 lines from top of page, reads thus :—

"The Editors of this journal have been so largely implicated in *the* judging *when called upon for it. Our friend remarks* that it is."

If the above quotation is read minus the words which we have italicised, it will make sense out of what, through a printer's error, reads very like nonsense.

SELLING HONEY.—We may now dismiss this subject by strongly advising all who read these lines never to lose sight of the immense advantages the bee-keeper possesses over the ordinary producer of food stuffs in that honey is not "perishable." This is one of the most important benefits claimed for our craft, and in a season of slow sales, from whatever cause, or one of "honey-glut," when bees will store cram full of honey any receptacle offered to them, it only needs to see that the product is thoroughly *ripe* in order to keep it for years, and re-liquify and sell at a good price when a season of scarcity occurs.

DRAWINGS OF HIVES TO SCALE.—We have been urged by a few correspondents to follow the example of some contemporary technical journals, and publish working drawings to scale of bee-hives for the use of readers who devote their winter evenings to making their bee-appliances at home. With the idea of helping readers in this way we are in entire sympathy, but so far as the particular application of it at present suggested we fail to see any advantage. In other words, let us ask what special hive should be selected for dealing with, or the drawings applied to? It is, no doubt, flattering to the writer to notice that the only hive so far suggested is the "W. B. C." A good set of "drawings to scale" of which has been sent for approval, accompanied by the offer to take the responsibility of publication. But why this hive? In a year or so some more ingenious bee-keeper than "W. B. C." may design a hive before which ours may drop out of use at once. Besides, what more can be done to assist readers who desire to make this hive than has already appeared in our pages? Mr. Peebles (himself a practical joiner) has supplied "drawings to scale" which in the opinion of many —ourselves included—are the perfection of simplicity and thoroughness. Now, if this is so, why go in for *full size* drawings? Bee-hives are not like ladies' dresses, where working "paper-patterns" are, no doubt, indispensable. An amateur joiner only needs plain figures and his rule in order to mark out wood of any size; and this being so, it will be, in our opinion, a very risky speculation to publish "Drawings to scale."

KENT AND SUSSEX B.K.A.

ANNUAL MEETING.

The annual general meeting was held at 105, Jermyn-street, on January 28. The attendance included local secretaries from distant parts of Kent and Sussex.

The statement of accounts and report were adopted.

In reviewing the operations of the year, it was seen that the progress as regards work and income was very satisfactory. The Association is now entering its twenty-first year. The benefits conferred on its members were shown to be increased by reason of an additional expert tour in autumn as well as in spring. These visits of inspection and instruction were increasingly appreciated.

A point specially noticed in the report was that the expert work was the only means in existence of obtaining statistical and general information as to the extent and condition of bee-keeping in Kent and Sussex, and particularly as to disease in apiaries; and but for the experts' returns there would be no available figures to show the magnitude of the mischief and the necessity for dealing therewith.

The Council and officers were thanked and re-elected, with slight alterations; and it was unanimously decided to ask Sir Henry Harben to act as President for another year.

The drawing for cottagers' prizes followed.

Thanks to the R.S.P.C.A. for the use of their Council room and to the chairman concluded the meeting.

IRISH BEE-KEEPERS' ASSOCIATION.

The Committee met on the 19th ult. Present—Dr. Traill in the chair, Rev. J. G. Digges, Mr. Farrelly, Mr. O'Bryen, and Mr. Chenevix (hon. sec., 15, Morehampton-road, Dublin). A circular, prepared by Mr. Digges for the guidance of local associations, was approved. The secretary reported that he had made application to the Royal Dublin Society to give prizes for bees'-wax as well as honey at the winter show.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

NOTES BY THE WAY.

[3472.] We have had a short spell of frost for a few days, an acceptable change from the previous wet weather, though here on the hills we do not suffer any inconvenience or loss by flooded dwellings or drowned stock, not even the bee-hives. The latter are safe if the ground on which they stand is firm, with the precaution of a piece of brick, tile, or slate placed under each leg. The rough winds of a fortnight since laid a few trees low and scattered the thatch and roofs of some corn ricks and farm buildings. No hives damaged.

Just before the frost set in the apiary was alive with bees out for a cleansing flight; to-day (January 30) a cold thaw with rain from the north has, however, again changed the weather aspects. Ample opportunity has been afforded to bees this winter for getting abroad, and I have no doubt breeding has started in some colonies; in fact, I have noticed bees gathering water from the blades of grass since the New Year came in.

Honey Sales.—First let me disabuse the minds of readers that in a former "Note" on show sales I referred to my own sales only of honey, I had in mind others rather than myself. During the year I receive many letters from bee-keepers when sending to me for lace paper for glazing their sections, a few lines from one, a long epistle from another, and I generally manage to send a line in reply. I am always pleased at being so favoured with their confidence, and but for the many calls on my time, especially in the evenings, I should reply *in extenso* as the exchange of ideas is very helpful to both parties concerned.

The honey crop of 1898 was undoubtedly under an average as regards quantity, and a large portion of it was decidedly "off" in quality. Nor do I doubt that my cousin, Mr. A. D. Woodley, is correct in his opinion (expressed on p. 32 last week) that good comb honey is very scarce; in fact I have an inquiry now for several gross of light-coloured well-filled, sections.

I notice our Editor refers to the exhibit of honey at the Groceries Exhibition. I, too, saw this exhibit, and if appearances went for anything, it was of good quality. The close grain of the granulated honey told how carefully it had been handled in transferring from tins (sometimes old kerosine tins) into glass jars on its arrival in this country. But we, with our short honey season of six weeks, cannot hope to compete with countries having honey flows lasting from four to six months; and it was with this very exhibit in my mind that I penned my remarks in November *Record* on clarified honey. I then questioned if judges at our shows had really benefited British bee-keeping by giving so great a preference to the most highly clarified samples, seeing that, in my experience, a honey which has been clarified rarely recrystallises again with a close grain, but looks like "porridge," salad oil, or soft soap. If honey, when reliquefied, would remain liquid there would be no difficulty, except in leakage and messy bottles; but the semi-crystallised state of the product, I maintain, has not an appetising appearance. This recalls another "Note" which I hope readers will discuss, viz., the multiform vessels in which exhibits are staged or put before the public, and the bearing this has on establishing a market for our product. The "ten ton" firm used jars of one shape only in two sizes; nominal pounds and half-pounds. I hope to get their price-list, and will refer to it in my next "Notes." Another large London firm I could mention uses only nominal 1-lb. screw-capped jars. Nor did I assert that all heated honey loses its *aroma*. I said "the best part of its aroma is lost." Had I *thought* all the aroma was lost, the many practical tests I have experienced during the past twenty years would teach me otherwise, and, only recently, when writing on "unfair exhibiting," I suggested that the sample of '97 honey was more likely carefully re-liquefied than fed back to the bees to convert it into 1898 honey. But I do know that many samples of honey staged during recent years have had a *cooked flavour*, through careless or inexperienced overheating to give it that clear lustre seen in good "golden syrup."

Honey Dew.—Mr. Loveday (3557, p. 32), will notice I said *secretion*, not *excreta*, and I admit that under certain atmospheric conditions there may be a real exudation of plant-juice without any insect infesting the same; but, generally speaking, the so-called honey-dew is a secretion of aphids, but I do not say the excreta of aphis; this secretion is ejected from two tubes, one on each side of the back of the insect, and falls on the leaves below, forming, with the moisture of the atmosphere, the "dew." Pliny gravely hesitated whether he should call it the sweat of the heavens, the saliva of the stars, or a liquid produced by the purgation of the air! The aphis infest many trees and plants, and produce a secretion according to the sap or juice of the plant; the maple and lime are fairly good samples, the oak, owing to the tannin in the sap, is strong and dark, while that of the fir-tree (*Aphis abietis*) produces a kind of waxy substance, like fine white moss.—W. Woodley, *Beedon, Newbury.*

CELLULOID QUILTS.

BEE-PROOF THREAD FOR "WIRING" FRAMES.

[3473.] I have never so fully realised the extensive circulation of the B.B.J. as during the past fortnight, when nearly every post has brought inquiries about celluloid "quilts" and "excluders." I hope I have replied to all these inquiries; but I shall be obliged if you will allow me to say that I do not supply either celluloid or excluders made from that material. Among the letters which have reached me were five from bee-appliance dealers, so that it may be hoped that your advertisement columns will soon indicate where these useful articles may be procured.

Like your correspondent, "A Cockney Bee-Keeper," I have tried cotton instead of wire for strengthening foundation, but my bees would not desist until they had pulled the cotton to pieces fibre by fibre, and in so doing they waste much valuable time. I have, however, got over the difficulty by coating the cotton with a tough elastic substance, which is bee-proof and adheres well to the wax. Most of my combs are secured with this material, of which I enclose a sample.—WALTER F. REID, *Fieldside, Addlestone, January* 28.

[Our esteemed correspondent will no doubt pardon us for not being sorry that our circulation is large, however much we may regret the trouble caused to himself in consequence. But having personal knowledge of Mr. Reid's thoroughness in all he does, we can quite understand his taking any amount of trouble upon himself to help others.

Now about the bee-proof thread sent for our inspection. We cannot for the life of us imagine what the coating used consists of; but that it will serve the purpose intended, and serve it well, we can well believe, seeing how completely the textile fabric of which the thread consists is encased in the proofing substance. In order to avoid giving trouble as much as possible, we suggest that readers desiring to see a sample of the "bee-proof thread" should send a stamped addressed envelope, ask for no details requiring personal reply, and simply use it as in ordinary "wiring."—EDS.]

PAINTING INSIDES OF HIVES

IS IT A GOOD THING?

[3474.] I am not yet a bee-keeper, having until now always lived in a town, but I intend to try to make a beginning with bees ere long. I have been a regular reader of your Journal for two or three months past, and I wish to point out what I believe to be an error in the editorial reply to a correspondent in the B.J. of January 19 ult. (3553 p. 24). My experience of painted interior surfaces is that they condense moisture too freely. I am an old shipmaster, and on one occasion myself and officers were terribly troubled with damp quarters on one of our finest ships. The paint and varnish were constantly wet; we therefore had some linoleum specially prepared without paint on the surface; this was cemented by some means to the sides of the offending berths and the trouble ceased. For the same reason I should be suspicious of celluloid used as a quilt, and of American cloth with the varnished side downwards.—O. M., *York, January* 24.

[In a private note our correspondent kindly gives us the option of printing his note in extenso or replying briefly in "To Correspondents" column. We prefer dealing with it as above because of the opportunity it affords of assuring him—as one just about to start bee-keeping—that this JOURNAL would soon lose the weight and authority which we may without egotism claim for it if its replies to querists on matters pertaining to bee-keeping were either unreliable or misleading. We are, as Editors, well aware of this and also of the fact that our opinions on practical bee-matters have to pass under the eyes of some thousands of readers, a large number of whom probably know quite as much as we do ourselves (even with our thirty years' experience) or as any-one else does. This being so, it may be taken for granted that our correspondent, when himself a practical bee-keeper, will find, as we did years ago, that—leaving theory aside—the insides of bee-hives *may* be painted without any detriment to bees. Indeed, in fighting foul-brood—a battle which first caused us to use paint for safely putting out of harm's way the spores of that disease—there is no better material for disinfecting the insides of hives than two good coats of oil paint.—EDS.]

SINGLE *V.* DOUBLE WALLS.

WHICH ARE MOST SUITABLE FOR BEE-HIVES?

[3475.] There can be no question as to which are the best hives to winter bees in, those having double walls being, to my mind, undoubtedly A1.

The argument that single walls more easily let in the outside warmth cuts two ways, for if the sun can send its heat, Jack Frost, when he is busy, can also make his chilling influence felt. When surrounded by thick warm material, it seems to me the inside of a hive must more easily be kept at a uniform temperature and attain the proper heat. I have just had an illustration of this with an incubator in which the temperature was constantly altering from outside influence. I took it partly to pieces and inserted packing for warmth, making all things fit close to keep out draughts. This incubator is now far more easily kept at a uniform temperature than before the alteration. Another instance of this is to be found in the thin brick walled houses of to-day compared with the thick stone walls and thatched roofs of the old days (or in this district Stonesfield slates). In the latter case, the coal bill will soon show which

best keeps the inside warm in winter, while in summer it is delightfully cool in such a house, the heat being kept outside. This is my experience.—J. K., *Oxon, January* 19.

NOTES FROM SOUTH BUCKS.

[3476.] At last we have had a few days of real wintry weather, and it seemed quite a change after the mild unseasonable time, which one could hardly call "weather," of the last two months. But to-day I note the bees are busy on the wing, looking none the worse for the cold spell. Stocks that have been put up for winter short of stores greatly need attention and should be seen to at once. A good many bee-keepers who do not look to the rain-resisting qualities of their hives will no doubt find a few quilts wet, caused by the drifting rain storms, and if dry ones are not soon put on, it will be a source of danger to the colony in the spring. I always make it a rule to fill the top "lift" with shavings, as it is at the top of the hive they need most warmth. Already I see with pleasure numbers of crocus peering through the ground, denoting that ere long spring will be upon us bee-keepers, with its many preparations for the coming season.

Selling Honey.—This seems a source of great trouble to many bee-keepers, but for myself I have never been troubled with getting mine off my hands at a fair price before the end of September; and I think a great deal more could be sold if bee-keepers were a little more pushing at the local shows in their neighbourhood, as I find that is the time to strike, just when the cream of their produce is on view. And if an order is taken, do not, on any account, send inferior stuff to the customer, as you are only doing yourself harm another year by doing so.

Curing Foul Brood.—In answer to your correspondent, "G. M. S.," 3568, p. 36, I may say the bees are never confined to the hive at any time during treatment, but allowed free flight.—G. Sawyer, *Marlow, January* 30.

GLASS *V.* CELLULOID "QUILTS."

[3477.] I am obliged to Mr. Woodley (3527, p. 2), and especially to Mr. Reid (3541, p. 13), for their kind suggestions and information. I have not replied before as I was hoping to hear, perhaps, from others who might have tried celluloid, and who could also have given me the benefit of their advice and experience in the matter.

My glass "quilts" are *laid* on frames of the kind suggested by Mr. Woodley, but are not *inserted* in them, principally because of the difficulty of cleansing a compound wood and glass fitting in case of foul brood, of which, I much regret to say, I have had a very trying nd persistent experience. Also, the expense ould be greater, instead of less. The glass sticks" mainly because the bees build brace-combs to it from the top of the frames, besides propolising it all round; but as I always allow a similar bee space under the excluder zincs, I am saved any trouble of cleaning the frame tops periodically. Hitherto I have detached the glass by means of a very long, thin, flat knife, but this year I shall try whether a fine copper wire may not reduce the bill for breakages in the process, especially when one is in a hurry.

I am much gratified to find that Mr. Reid has anticipated my idea, and found it practicable; and I look upon the celluloid "quilt," and even still more the celluloid excluder, as two very valuable "coming things" for bee-keepers. The celluloid "quilt" will beat American cloth or anything of that kind, hollow, and both that and the celluloid excluder will get rid at once of all the objections to glass and metal close upon the brood-nest, and enable us to see at all times what the bees are doing.

Would Mr. Reid kindly add to the obligation, under which I feel to him, by telling me where I can now get the sheets and excluders of transparent celluloid, the special cement, the velvril solvent, and their present approximate prices? Do the particulars given in his interesting letter in the B.B J. of January 28, 1897, p. 36, No. 2769, still hold good? I have neither the time nor the appliances to perforate the excluder zinc myself, and should have to get it done for me somewhere. Could I do this? [See 3473, p. 43.—Eds.]

Unless unexpected drawbacks should be discovered in practical working, I cannot but anticipate a future for this new application of celluloid, and shall certainly myself experiment with it during the coming season.—W. R. V., *Sussex, January* 27.

(*Correspondence continued on page* 46)

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Mr. Franklin, a portion of whose apiary forms our apiary picture this week, sends so interesting and complete an account of it that we need add nothing to it. He says:—

I commenced bee-keeping at Ryton-on-Dunsmore nearly twenty-five years ago with a swarm in a straw skep given me by a friend —a "present" I had no particular desire to possess, for my fear of the bees was the greatest difficulty I had to overcome at the commencement. I had then no idea of any "management" other than letting the bees swarm, and consigning a portion of them to the sulphur-pit in the autumn, with the possibility of securing a little super honey in a bell glass or a straw "cap." But I am glad to say "light" soon came, and before my stocks were numerous enough to require the sulphur-pit I had learned a better way.

My interest was first aroused by coming across Pagden's "£70 a Year—How I Make

it by My Bees." I thought that "feeding" idea when supers were on was grand! I cut $\frac{3}{16}$ inch (?) slots in adapting-boards to place between stock hive and super as there recommended, and neither queen nor drones came up, neither did the workers. In the autumn of that same year I visited the Agricultural Show at Leamington, where I saw the bee-tent and "driving" demonstrations—saw, for the first time, a movable comb-hive and numerous bee-keeping appliances. The fascination of bee-keeping took a deep hold of me that day, and my fears went down before my enthusiasm. I started with a frame-hive the next year, put a swarm therein, and took 30 lb. of surplus honey from it the same season.

I then made more hives, and became a successful bee-keeper with eight stocks, all I then had accommodation for. In 1887 I astonished my neighbours by taking 5 cwt. of honey from six stocks, but at that time few believed I had done it honestly. I have from the first found bee-keeping very profitable, although my honey is all sold in bulk at 6½d. per lb., while my neighbours were getting 1s. per lb. for their skep honey.

When I moved here four years ago I rapidly increased my stocks, which now number about fifty. My apiary is situated in a meadow alongside the garden close to my house, a portion of which is seen. The post-and-rail fence with wire-netting to keep out stock somewhat spoils the picture. The turf has been removed from the enclosure, and a good bed of ashes put down. A row of fruit trees and shrubs up the centre with the hives grouped round them. The entrances all turned towards the centre completes the description.

My eldest daughter (aged fifteen) is seen on the right amongst the hives, with myself at the extreme left. I do not as a rule like to see "the family" brought into your bee-garden pictures, but my daughter well deserves her place "among the bees," if only for her willingness in helping me with my bee-work. She has no fear of stings, as will be evident when I say that the picture was taken in the middle of a hot July afternoon.

I have never kept any other variety than the common black bee, with which I am quite content. I prefer the single-stock hive with ten frames, some I work for section honey, others for extracted, using both deep and shallow frames, but I look to get as much profit each year by sale of stocks and swarms as by honey production. Bee-keeping is now my chief occupation—being engaged as expert for the Warwickshire B.K.A. and holding a lecturing engagement from the Warwickshire County Council.

I have little to add except that I am the proud possessor of the first-class diploma of the B.B.K.A., which I secured at the examination held in May, 1897, in connection with which the kindly tact shown and encouragement given by the "examiners" still lingers as a pleasant memory in my mind."

[We are pleased to note Mr. Franklin's allusion to the desirability of keeping family groups out of our bee-garden pictures, always making exceptions, of course, as in his case.]

MR. G. FRANKLIN'S APIARY, BARTON GREEN, KENILWORTH.

CORRESPONDENCE.

(*Continued from page* 44).

WIRING FOUNDATION.

BEES AT THE HEATHER.

[3478.] A correspondent (3560, p. 33) asks if thread is preferable to wire. To which I answer "No," and to explain why, let me say that in 1896 my supply of tinned wire ran out, and I could not conveniently get more, though I had plenty of fine copper, but I was afraid of verdigris, thereby causing injury to the bees; so I began to hunt around for a substitute. I got some fine hemp, or shoemakers' thread, twisted same two-ply, and used it just as we do wire, embedding it with a warm implement, and put frames in the usual way. A few days afterwards I found pieces of hemp of various lengths up to three inches lying outside, and I cannot say whether the bees had drawn out the foundation or not, having no time to examine. A month later I took the hives, including those with threaded frames, to the moors in a cart, without any mishap. At the end of the heather honey season the bees were returned in a similar manner, but before arriving home I noticed honey coming out of two of the hives. On examination I found three frames in which the combs had broken down; fortunately these were near the outside, and the loss of bee-life was comparatively small. On examining closely into the cause of the mishap I found it was owing to the hemp having been gnawed away by the bees and thus the combs were unsupported. Some of the frames so threaded had, I admit, stood the test, but I am inclined to think that wire would have made all safe. That was my first and last experience with thread. And so I say though it may suit "A Cockney Bee-keeper," as your correspondent signs himself, I think he would use wire if he had to take his bees to the moors.

Doctors Differ.—Preparing Bees for the Heather.—I was pleased to read the extracts collected by "F. E. I. S." (3528, p. 3), and I hoped that the various opinions expressed would set the ball of "discussion" rolling, but, so far, we have only been favoured with Mr. John Hall's able letter (3537, p. 12), but I trust that other opinions have yet to appear.—CHEVIOT, *Wooler, Jan.* 28.

"WELLS" HIVES.

SHOULD SUPERS BE OCCUPIED BY BOTH STOCKS?

[3479.] In your issue of the 19th inst., Mr. Quayle (3549, page 22) raises an important point to bee-keepers when he asks the question: "What is the advantage of letting the bees (in "Wells" hives) have common access to supers?"

My experience is small, as I possess only one double hive; but I find that, unless the bees on both sides of the perforated division are crowded to the point of swarming, they do not store the common super evenly, but leave the frames nearest to the centre (over the perforated division board) unfilled until the remainder are stored. This fact makes me think that two stocks of bees do not voluntarily work together in a super, but that each colony stores over its own brood-nest. If honey is coming in freely, and both colonies are so crowded that they require every available cell for stores, then they may appear to work amicably in common; but it seems more probable that each lot, happy in the possession of its own brood and super combs, only tolerates the close proximity of its neighbour, with whom it has no cause for quarrel. The experience of those who have worked "Wells" hives, both with supers common to both colonies and with separate upper chambers to each stock, would, I believe, be of interest to other readers as well as to—G. R. S., *Llanellen, January* 24.

BEE-KEEPING AT A CONVERSAZIONE.

[3480.] As showing how the interest in bees and bee-keeping may be kept alive, even in winter, when it is impossible to show live bees, a brief account of the success I met with at a conversazione held in the Richmond County School and Technical Institute on January 9, may possibly be useful to some readers of "ours." I made an exhibition of appliances as per enclosed printed list (some of which were kindly lent me for the occasion by Messrs. James Lee & Son, High Holborn, and it was arranged for me to deliver a twenty minutes' lecture twice during the course of the evening. Instead of two set lectures, I found it was necessary to stay in the room the whole evening, for as fast as I got rid of one batch of visitors another was ready to take their places, notwithstanding such other attractions as the exhibition of the Röntgen Rays and Colour Photography, public meeting and prize distribution, and musical programme. Several of my audience asked such questions as leads one to suppose that the number at present in this town who keeps bees (there are only five of us) may expect an increase to their ranks, and that when the S.B.A. bee-man visits us in the spring (as arranged) it will find pupils ready and willing to profit by its teaching.—WILL. HAMPTON, *Richmond, January* 11.

BEE LORE.

[3481.] One meets with very curious ideas about bees and their management amongst some of the old folk superstition, and not seldom get useful ideas on the beginnings of things which have led to the modern methods of keeping the little folk.

Some time since, on buying a swarm from a cottager, I was very seriously informed that "when you have got them home and hived, you must tap the hive and say, 'Now you have got a new master,' else the bees will

never do any good." Another wise one said, "When a death occurs in the family be sure to put some crape on the bee-hives, else all the bees will die!" A third was so impressed with the cruelty of the modern bee-keeper as to say, "We ought to get a law passed to stop your cruelty in taking the honey from the bees before winter, and not destroying them." This party considered himself a very knowing bee-man, and he certainly was a successful one in the old style; but what notions as to cruelty!—JOHN KIBBLE, *Oxon, January* 19.

A MIXED SALE.

INCLUDING OWNERLESS BEE-HIVES.

[3482.] The accompanying cutting is from the *Rural World* of January 7.

I hope the buyer is less absent-minded and more (bee) feverish than the late owner. No doubt some bee-keepers who have experienced foul brood might think the ownerless hives "dear at a gift."—W. LOVEDAY.

"A remarkable collection of railway flotsam and jetsam, which has been 'thrown up' at Euston station and elsewhere on the North-Western system, in the form of goods left for passengers, was sold in London this week. Among the heterogeneous lots, which represent not only absent-mindedness on the part of the company's patrons, but a policy of deliberate abandonment as well, may be mentioned thirty-five dog muzzles, a quantity of theatrical scenery, a horse-clipping machine, 215,000 cut tacks, a punching machine, a butcher's block, 1,200 umbrellas, three pairs of corsets, thirty bladders of lard, 250,000 pins, a dozen bee-hives, and a sponge bath. There are also eighty gilt Jubilee medals, 3,000 cigars, 11,000 envelopes, and an almost innumerable assortment of bicycle accessories.

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING JAN. 28, 1899.

1899.	Bar. in.	Tem. 9am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Jan. 22....	29·20	47·5	51	47	4	49·1	·02
,, 23....	29·68	39·9	41	39	2	40·0	·02
,, 24....	30·30	32·0	40	30	10	35·2	—
,, 25....	30·55	22·0	38	20	18	29·4	·01*
,, 26....	30·64	34·0	42	22	20	32·4	—
,, 27....	30·49	35·5	40	33	7	36·6	—
,, 28....	30·32	32·0	37	30	7	33·6	·01
Means	30·17	34·7	41·3	31·6	9·7	36·6	·06†

* Hoar frost. † Total, ·06.

The rainfall, viz., ·06 in., =1,357·38 gallons, or 6·06 tons to the acre, or 4·8 oz. to the square foot. For the week ending January 21, the mean temp., viz., 44°·7, was + 8°·0, and the rainfall, viz., ·99 in., +·53 in. The rainfall, January 1 to 21, viz., 2·30 in., is + 1·00 in.

FRED. COVENTRY.

COMPARATIVE TEMPERATURE, JANUARY, 1898 AND 1899.

High temperatures registered at Duddington, near Stamford, Northants:—

JANUARY 19-22, 1898.

1898.	Temp. 9 a.m. deg.	Max. deg.	Min. deg.	Range. deg.	Mean. deg.
Jan. 19	50·0	54	43	11	48·7
,, 20	51·5	55	50	5	52 6
,, 21	50·0	54	48	6	51·1
,, 22	47·1	*52	45	7	48·6
Mean ..	49·7	53·8	46·5	7·3	50·3

For the week ending January 22, 1898, the mean temperature, viz, 45·3 deg., was + 8.6 deg.

JANUARY 19-22, 1899.

1899.	Temp. 9 a.m. deg.	Max. deg.	Min. deg.	Range. deg.	Mean. deg.
Jan. 19	51·0	52	41	11	46·7
,, 20	44·8	55	40	15	47·8
,, 21	53·1	55	43	12	49·2
,, 22	47·5	51	47	4	49·1
Means..	49·1	53·3	42·8	10·5	48·2

For the week ending January 21, 1899, the mean temperature, viz., 44·7 deg., was + 8·0 deg. FRED. COVENTRY.

Queries and Replies.

[2152.] *Solar Wax-Extractors.*—In B.B.J. of July 7, 1898 (p. 261) you report the wonders accomplished by the "Solar" Wax Extractor, but there is no account how Mr. Weston made his successful extractor, nor what solar heat is required to work it. Such information would be instructive and appreciated.—H. F. J., *Henbury, January* 24.

REPLY.—We will draw Mr. Weston's attention to above and may be favoured with reply from himself.

[2153.] *Leaving "Lifts" on in Winter.*—I have allowed a "lift" to remain on each of my "Cowan" hives this winter, instead of taking off as usual. Is this wrong?—L. N., *Sussex, December* 12.

REPLY.—If by "lift" our correspondent means a section-rack, no harm will follow so long as the queen has access to the "lift" or rack.

Echoes from the Hives.

South West Sussex, Jan. 28.—The remarkable feature of the recent long spell of mild weather has been the absence of any "gadding

about" to speak of on the part of the bees. Doubtless the persistent rain and general dampness has had a good deal to do with this. But even on apparently most favourable mild and rainless days, the bees have not left the hives in any numbers, but only in occasional single flights; and only most rarely on one or two warmest and sunniest days, have they "danced," or done more than show themselves in strength at their hive entrances, busily cleaning up, and frantically expelling intruders. Just now, since the frost set in a few days ago, they have shrunk surprisingly and clustered densely in all the hives. As I have invariably found in previous years, the weaker stocks have disappeared entirely from view when I look down upon the frame-tops through my glass quilts, and are evidently massed upon the lower parts of the combs. The stronger stocks remain crowded up against the glass, but stocks which in the mild weather apparently covered the best part of ten frames, now are compressed between three or four at the most, unless it may be that they extend farther below out of sight; and those on the outsides of the clusters are always fanning when I first raise the wraps on the top of the glass. Of course, stores will now last all the longer, but the loss of bee-life cannot but be greater, and may easily be fatal to small stocks.—W. R. N., *Sussex, January* 27, 1899.

Norwood, S.E., January 16.—With the turn of the days and the spring-like weather of the early part of last week, our hopes in the bee-world are once more concentrated on our hives, and we commence to think and wonder in what condition they will come out. All through the restful season we have had at intervals evidence of the life within by an occasional fly-out, and we are anxious to know whether the past mild weather is for good or ill. Of our own stocks we can safely say all are very strong in numbers and promise to answer the roll-call well a couple of months hence. I notice almost daily some good omen that makes a bee-man's spirits run high: gnats on the wing, with an occasional flitting of a moth; the mavis mated and singing in the trees; the swelling of the buds of the fruit-trees and the resurrection of the snowdrop and daffodil. All these signs point to an early spring and commencement of work.—Two Bee-Blossoms.

Wooler, Northumberland, January 30.—We had some very mild weather before the 20th, and the bees were then flying very strong; and on looking below the quilts I noticed that their stores were being rapidly used up, which will necessitate a cake of candy to make all sure. Since then the frost has been very keen, the thermometer standing below 40 deg. Fahr., while the bar has been standing very high, viz., 30·88. However, a change has again come and it has dropped to 30·28.—"Cheviot."

HONEY FOR MARKET.

By R. F. Holtermann, Editor *Canadian Bee Journal.*

In selecting the above subject as a topic for the annual meeting of the Ontario Bee-Keepers' Association, I chose it because it gave abundant ground to cover. It might almost embrace the entire subject of bee-keeping, but my intention is to confine myself to a very small portion of the field. I need not enlarge upon the importance of decreasing the cost of producing honey by having strong colonies for the honey flow, not only by bringing them well through the winter, but by giving them judicious care from that time until the honey flow begins. To many this alone is the battle-ground for profit or loss in bee-keeping. Beginning with the supers, a beginner should ask himself if he shall produce comb or extracted honey, and what are the advantages and disadvantages of the two systems. Not counting the cost of the supers, which can be used from year to year, and remain with the bee-keeper, 100 lb. of extracted honey can be sold without disposing of any of the apiarian supplies. In 100 lb. of good comb honey, however, he has to give along with the honey 120 sections, at a cost of about 2s., enough thin super foundation to fill 120 sections, nearly 3s., and ten comb-honey crates, 4s., making a total cost approaching to 8s. 6d. In large quantities this may be diminished somewhat, but with a beginner it is not far astray. The cost of material which has to go with the sections is, then, nearly 1d. per section. The moment a man places a value on comb and extracted honey, he runs the risk of some one trampling on him; but I believe that the interest of many demand that this subject should be taken in hand, and if the figures given are not satisfactory, you can do your figuring on a basis satisfactory to yourselves. First-class comb honey in this Dominion of ours is selling at prices varying from 4s. to 9s. per dozen sections, the price differing according to season, locality, honey crop, &c., or running from 4½d. to 10½d. per section; and when you deduct, say, 2d. from that, it leaves from 3d. to about 9¼d. per section. In the tens of th ousands of pounds of comb honey our company has handled, and many more transactions I know of, I have yet to hear of a case where the seller was paid for his marketing crates. First-class extracted honey sells in Canada at 3d. to 7½d. per lb. (more frequently at 3d. when purchased in large quantities, such as 1,000 lb. to 5,000 lb.), and comb honey at 5½d. The difference thus far on first-class honey is less than ¼d. to about 1½ per lb.; but have we considered the entire difference of cost? I think not. Those who believe that in production 70 lb. of comb honey are equal to 100 lb. of extracted, are considered by the majority of bee-keepers as over-estimating the ratio of comb-honey; many more say it is 50 lb. to 100 lb. I am inclined

to think that, with the best management, the first is right; but with a bee-keeper not thoroughly experienced, or not having time to apply his knowledge, it may be even less than the latter. Taking the ratio of 70 lb. to 100 lb., a hundred pounds of extracted honey would generally bring about 24s., while the 70 lb. of comb honey would realise 33s. 7d. Deducting, say, 1d. for the cost of sections and crates, this leaves about 28s. 6d.—a difference of 1s. 0½d. For the sections must be folded, the foundation put in the supers, wedged up and put on. These supers must not be put on too soon, lest the bees spoil the foundation and soil the sections. Increased care must be taken, and, with every caution, there will be a greater tendency to swarm, a snag against which beginners and other bee-keepers are so likely to run.

In extracting, we have the honey to take out and the empty combs to replace. To offset this in comb we have the bees to drive out of the sections, the comb to scrape, the grading, the nailing of the comb-honey crates, and the packing.

If the above figures are correct, it does not pay to produce comb honey with the present market difference. If the figures are not correct, I trust that the above will give some food for thought, and every one can adjust prices to his own condition.

Thus far we have referred to first-class comb-honey, but we know that the beginner and the man busy with other departments in life cannot give his bees the close attention necessary to produce first-class honey. Consequently he produces comb poorly filled, travel stained, light and dark mixed, with the result that it increases the cost per pound of sections and foundations with anything but a corresponding increase in the price of the product, and the producer becomes a loser. We might leave such a man to his fate, but our Association receives a Government grant, and we receive it to benefit bee-keepers generally. But this cull comb honey receives much greater attention than it merits. Market quotations appear to glory in giving the lowest prices, and if in Toronto, Monfreal, or some other cities a few culls have been sold at 3¼d. per pound, the public, without explanations, see in the Press that comb honey is selling at from 3¼d. to about 6d. The tendency of this is to depress prices; few men can resist a low offer when told that some one is selling at that price. I know individuals may be in a position to say they keep up prices, but the question is, are my statements in the main correct? And, if they are, is it not in every one's interest to discourage the production of inferior comb honey?

COMB HONEY FOR MARKET.

Having made an effort to throw some light on the relative profit in the production of comb and extracted honey, let me say, in producing comb honey for the market it is desirable to keep colonies strong, to know when the supers should go on and when they should come off. In going through the country I have time and again seen sections on the hives, even freshly put on, when there was not the slightest hope that the bees would do anything with them. I have seen them on colonies so weak that they could not take care of a full brood chamber, to say nothing of these supers, and producing surplus honey suitable for market. While we find such frequently the case, these errors can be comparatively easily avoided. To prevent inferior honey from being stored in the sections is, however, more difficult. The bringing from the brood chamber into the super inferior honey, and the storing of early gathered honey, can be avoided, first by shifting and uncapping honey, compelling the bees in strong colonies to convert dark honey into brood. If the bees require more room than the brood chamber affords, the extracting supers should be put on, and if there is any spare energy let the bees pull out sheets of foundation. Combs thus newly built offer an excellent opportunity for watching the colour of the honey coming in from day to day, and at the opening of clover just as soon as the bees cease bringing in (or up) dark honey, the sections are put on. To avoid cull sections towards the close of the season, we then change to extracted honey. This system has been the most satisfactory to us. Although we depend upon buckwheat as a crop, we do not consider, if it can be avoided, that it pays to finish with dark honey sections having a considerable quantity of light honey.

EXTRACTED HONEY.

In extracting honey a little too much does less harm than not enough. Two or even three supers on one hive can be used to great advantage, and this additional investment will do much to help the bee-keeper to decrease the cost of production. In running for extracted honey the danger of having dark honey carried up from the brood chamber is greater than with comb honey. To watch the extracting supers at the opening of the season would result in much less inferior honey being put upon the market. Better extract a little early honey then than have a lot of well-ripened dark honey. Even during mixed and unfavourable seasons a fairly good article can be secured by holding each extracting comb up to the light as it is taken in hand, and at the first extracting uncapping only such combs as show the light colour through the capping. The practice of exposing a large surface of honey in so-called ripening cans placed in an ordinary temperature is in ninety-nine cases out of a hundred altogether wrong. The honey becomes thinner rather than thicker. A simple test can be made of this by taking a plate, putting upon it a layer of honey $\frac{1}{16}$ in. thick; the honey set out in the atmosphere generally becomes thinner. If it takes up moisture on the plate, it will be almost sure to do so in the open can. This is contrary to the opinions of

those I have met thus far, but it can easily be tested. Seasons vary, it is true, but after the close of the honey season there is generally a considerable quantity of moisture in the atmosphere.

OUR MARKETS.

Already I have taken too much time, but we must study our markets, and put our produce in the most acceptable and reliable shape. While catering to the demand for very small packages, we should do everything in our power to discourage them. There may be several reasons accounting for the fact, but when honey was at least not less in price, 5 lb., 10 lb., 20 lb., and even greater sized packages were generally used, and the very small packages were unknown. Neither the consumer nor the producer has gained anything by this. Comb honey not well attached to the wood should be sold at home, otherwise it may disappoint every one connected with it.

There is at the present time talk of a European market for honey; should this develop, then, more than ever, will it be necessary to aim at a higher standard of perfection in the article. Such a course would result in a wonderful expansion in our home market.

I have of necessity had to leave much unsaid, but the sooner the idea is exploded that honey is simply honey, and all of the same quality, the sooner the public know that it varies in quality, just as much as butter, the better for every one.

In closing, let me say a larger return for capital and labour expended means greater profit; to secure the larger return, we want a greater quantity of produce or a better article, or both, and upon this the question of producing at a profit, or loss, hinges to to a greater extent.

I trust a discussion may follow throwing an additional light on the subject.

Notices to Correspondents & Inquirers.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

F. E. R. (Walthamstow).—*Advising Would-be Bee-keepers How to Start.*—We can offer no better advice than the purchase of a "Guide Book" on bees. Without this, any help the pages of our JOURNAL might afford will avail little.

I. L. (Carlisle).—*Moving Bees in Skeps.*—1. It will be needful to have the combs secured by passing "skewers" (*i.e.*, smooth sticks) through the combs a few days before removal. Then move them in cold weather, and as early as possible. 2. No. 3. Yes. 4. Hybrid bees will do as well as any for comb honey, but their sealing is less thick than that of the native bee.

"MADGE" (Sheffield).—*Joining Bee Association.*—1. There need be no difficulty in joining the Derbyshire B.K.A. because of your living "100 yards over the border-line in Yorks." 2. We do not know if lectures are given on bee-keeping by experts in Sheffield. 3. Dummy boards are frequently made with bee space below. 4. A good smoker is best. 5. About 9 in. is a convenient height for hive stands. 6. All information regarding experts' visits will be given by the Association.

R. MORGAN (Glamorgan).—*Increase from Skeps.*—By far the safest and best way for a beginner to increase from a single skep is to allow the bees to swarm naturally. If you prepare two frame-hives and "nurse" the bees to induce early breeding, it is nearly certain that you will have two swarms, the first of which may, if fed for a week after hiving, give you some surplus honey. Hive the second swarm on about five frames fitted with full sheets of foundation, and it may easily make a good stock for next year, so, with the skep still occupied, you may in a good season and with decent management increase your stocks from one to three and get a little surplus honey. Surely this will be satisfactory, to say the least. If the skep now weighs 15 lb., the bees are a good way off "starvation."

W. L. (Basingstoke).—*Moving Hives.*—1. We advise placing the three W.B.C. hives where the triple hive now stands, allowing the entrance of the centre one to come just where the central hive does now. The outer hives may each be moved two feet away right and left respectively. 2. For preventing swarming give room in advance, and plenty of ventilation. Or try a non-swarming hive. 3. Some good swarm appliances—practically queen traps—are now on the market (see dealers' lists).

W. H. W. (High Wincobank).—*Races of Bees.* 1. All the information we were able to obtain regarding the bees you refer to appeared in our pages several years ago, and as we considered them useless to bee-keepers, our interest in them has passed away entirely. 2. Frames containing "a great deal of drone-comb," especially when found in centre of brood-nest, should be removed at once and altogether from the hive, unless such have been so placed when drone-rearing for breeding purposes. 3. Candy in which peameal has been mixed is not suitable for winter feeding though useful in spring.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held on Friday, February 3, at 105, Jermyn-street, S.W., Mr. E. D. Till occupying the chair. There were also present Miss Gayton, Major Fair, Messrs. H. W. Brice, R. Hamlyn-Harris, J. M. Hooker, H. Jonas, J. H. New, T. J. Weston, C. N. White, and the Secretary. Letters explaining enforced absence were received from the Hon. and Rev. Henry Bligh, Sir Thos. Carmichael, Mr. R. T. Andrews, Mr. W. H. Harris, and Mr. Ernest Walker.

The minutes of the previous meeting were read and confirmed.

Mr. Robert Thos. Tennant, York City and County Bank, Limited, Thirsk, was duly elected to membership.

Mr. Henry Jonas, Chairman of the Finance Committee, presented to the Council the statement of accounts for the year 1898, together with details of the receipts and expenditure during the month of January, 1899. The recommendations of the Committee in respect to payment of accounts were approved, and the report endorsed.

The report of the examiners of candidates for 2nd Class Expert Certificates at the late examination was presented by Messrs. H. W. Brice and W. B. Carr, and in accordance with the recommendations it was resolved to award certificates to the following :—Miss M. N. Fraser, Miss B. Webster, Mrs. C. E. S. Watson, Rev. T. J. Evans, Rev. Sidney Smith, Rev. W. H. A. Walters, Mr. Wyckham Blackwell, Mr. J. S. Pearce, and Mr. Walter F. Reid.

May 5 was fixed as the date for an examination of candidates for 1st class certificates.

On the motion of Mr. Till, seconded by Mr. Jonas, it was unanimously decided to invite the Rev. G. W. Bancks, Mr. W. Broughton Carr, and Mr. R. Hamlyn-Harris to act as Judges at the Royal Show at Maidstone, in June next. Mr. Jonas and Mr. Hooker kindly undertook to accept duty as Steward and Assistant Steward respectively.

It was proposed by Mr. Hooker, seconded by Mr. New, and carried, that Mr. P. Scattergood be asked to judge at the Windsor meeting of the Royal Counties Agricultural Society, June 5 to 8, when the exhibition of honey and bee-keeping appliances will be under the management of the Berks B.K.A. At this show it is proposed to hold an examination of candidates desiring to possess the B.B.K.A.'s Third Class Expert Certificate.

Further correspondence in regard to the alleged offence of exhibiting as new honey the produce of a previous season which had been "fed back" to the bees, and again extracted, was placed before the Council, together with a signed declaration by the exhibitor against whom the charge was directed, specifically denying the offence; and the Secretary was instructed to inform the Lancashire and Cheshire Bee-Keepers' Association that in view of the conflicting nature of the evidence at the disposal of the Council, and the fact that no formal protest was made at either of the shows where awards were made in favour of the samples of honey in question, the Council regret their inability to take action in the matter.

It was resolved to hold the next Council Meeting and General Meeting of Members on Thursday, March 16, to be followed by a *conversazione*, as usual.

BRISTOL, SOMERSET, AND SOUTH GLOUCESTERSHIRE B.KA.

ANNUAL MEETING.

The tenth annual meeting of the above Association was held on Saturday, January 28, at 11, High-street, Bristol. The members, of whom forty-one were present, sat down to tea at 6 p.m., and later on when the business of the day began, the number of members and friends had increased to fifty-four. The chair was taken by Mr. R. Hamlyn-Harris, who, in his opening remarks, stated that, despite the exertions of the finance committee, there was a balance of £29 7s. 11d. due to the treasurer. He was pleased to note the educational value of the Association, five candidates having presented themselves during the past year for examination, and those who did not pass showed weakness on the question of foul-brood.

The minutes of the previous annual meeting having been read. The report and balance-sheet for the year were submitted and adopted.

The report referred to the loss to bee-keepers caused by the prevalence of honey-dew during 1898, a loss severely felt by the Association, as such, many subscriptions not having been paid, partly in consequence and in some measure owing to the fact that the expert (Mr. Withycombe), on account of an accident, had been obliged to defer his autumn round, and finally had given it up altogether. Many members had thus not been visited, and their subscriptions remained uncollected. It was decided to curtail expenses as much as possible; therefore, as intimated at the last general meeting, the minimum subscription for the future was fixed at 2s. 6d. It was also considered advisable to ask members to procure the *Record* direct from the office, 17, King William-street, Strand, London.

The chairman then delivered an address on "Parthenogenesis" [see report on page 57.—Eds]., which aroused considerable interest among those who are acquainted with the higher points of the science of bee-keeping.

Mr. Jordan afterwards gave an interesting and instructive lecture on the "Anatomy of the Bee," which was splendidly illustrated by means of Mr. Collard's lantern and Mr. Brown's slides. Exhibits of much interest were then shown, and discussion on various subjects followed.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

APICULTURAL NOTES.

[3483.] Winter time is rapidly passing by, but winter weather has hardly yet put in an appearance, though during the past week or so we have had frosty nights with clear, bright, cold days, which seem to be appreciated by everybody just now. The principal characteristics of the winter, however, up to the third week in January were wind, wet, and muddy mildness. So far as our district of Hunts is concerned, the weather for several months past has been almost continuously wet, but there has not been what we dwellers in the Ouse Valley consider an abnormal quantity of rain; that is to say, we have had no floods. Bees were not only able to take frequent flights, but were pollen gathering late in December. The last fortnight or so, however, has been sufficiently cold to keep them quietly indoors. I am unable to say what condition they are in, not having examined any of my hives since packing up for winter; but as they were left with an abundance of natural stores, I rest contented as to their being all right. Nor will they be interfered with for some time to come.

Candy-feeding.—I have entirely abandoned this item of bee-work from my apicultural programme. Exceptional cases may, of course, occur where it might be advisable, or even necessary, to fall back on candy; but, generally speaking, it has become with me a thing of the past. However adept one may be at candy-making, it is—to me at least—a "messy" job, while putting it on hives means disturbing bees at a time when they are best kept quiet. It may be all very well to talk about putting a lump of candy over the feed-hole, but, according to my experience, candy to be of any use in winter must be placed right above the cluster of bees; and to do that means letting *out* warmth and letting *in* cold. How long a time it takes the bees to again raise the temperature thus lowered, and how much food they have to consume in doing it, I will not try to explain, simply because I cannot. Again, we are told by some of your contributors that the best time to replenish the candy supply is when bees are having a cleansing flight. But if I go to my hives when the warmth tempts the bees to take a flight, I find that the moment I turn up a quilt the top-bars of the frames are instantly covered with bees. and to smoke them down means upsetting the whole colony. On the other hand, if I try to put on the candy without using smoke, a number of the latter will no doubt be crushed, however careful one may be. Hives ought not, in my opinion, be opened on any account whatever during the winter months, and, if properly managed in the autumn, there will be no need for it.

Stimulating with Flour Candy.—This, given in the spring will, no doubt, under favourable conditions, produce good results because of its stimulating properties, but bees so fed are tempted to fly abroad regardless of weather, presumably in search of water; and so if the weather happens to be mild, well and good. Indeed, some of my stocks have in the latter case come on amazingly. But if cold (as it so often is in early spring), these untoward flights cause the death of many bees through inability to reach their hives again. The result is that, although candy encourages early breeding, it also increases the death-rate amongst the adult bees. The net gain, therefore, is more than doubtful. During the past ten or twelve years I have used a deal of candy with varying results; and after considering all things, have decided that, so far as candy feeding, it is best to entirely avoid the necessity for it. The trouble and expense involved in replacing honey taken from the bees and sold at present low prices is, to my mind, short-sighted policy. Occasions occur, no doubt, when one's most careful calculations are upset, such as when the consumption of food during the winter months is so abnormally large that stores become exhausted weeks or months before the usual time. Under such circumstances candy is most useful; but these cases are so exceptional that they only go to prove the rule, and any bee-keeper of intelligence will provide against such. Again, candy is the most expensive bee-food that can be given. I have tried all ways of managing bees, and all methods of feeding them, and I say without any hesitation that the best plan is to leave sufficient natural stores in every hive to last until honey comes in again. Stocks so provided in autumn require no further attention until supering time arrives, and they are the ones which yield best results. Moreover, the owners of such stocks can realise something of the pleasures and profits of bee-keeping. But when one is constantly dipping into his pocket to pay the sugar bill, and finds that so much time and attention are occupied in candy-making and feeding bees, the pleasures of the pursuit diminish and the profits do not increase—at least, that is my experience, which is here given for what it is worth.
—ALLEN SHARP, *Brampton, Hunts., Feb.* 6.

BEE-KEEPING IN SOUTH AFRICA.

INTERESTING LETTER FROM A B.B.K.A. EXPERT.

[3484.] After such a long silence on my part, some of my English friends may be wondering what has become of me. Well, after many changes, I am thankful to say I have settled down at last. You will see by

address at foot that I have left Sunday's River, Blue Cliff. After twelve months' hard work down there, I did not like it, so I "treked" and came back here, where I am much more comfortable and getting on quite satisfactorily to myself. I am working this farm on halves with the owner, who is a gentleman of the first order. When I had arranged with him and I came here he told me to "do as I liked with the place, just as if it was my own." So I have been very busy, for we are making three large dams and a reservoir, besides laying down miles of piping for irrigation purposes. We are also erecting an oil-engine to pump the water to the highest part of the farm, and when I tell you we are already engaged on starting the following branches of work, you can imagine I have a very busy time of it. We go in for (1) market gardening, both vegetables and fruit; (2) we are nurserymen, and grow plants and flowers; (3) poultry; (4) pigs and rabbit farming. I had almost forgotten bee-keeping, but you may well guess that bees have a place in the concern. We have fourteen oxen and ten mules, which do the work on the farm and take the produce to Port Elizabeth market, where it is sold by auction, the proceeds of same being divided every month; the owner gets one half and myself the other; he finds all the working expenses except the management and manual labour. I employ twelve natives who are paid by myself. When everything is in working order, I anticipate it will be a good thing for me as well as for the owner, seeing that my success (working on halves) will also be his. We have three large greenhouses now on the way out, and have taken a small nursery ground in Port Elizabeth, where we shall erect one of them as a shop, wherein to sell the produce of the farm retail. We also propose to start the bee-appliance trade in our "shop" as well. The other greenhouse will be erected out here to grow flowers and plants.

You may wonder what all this has to do with bee-keeping, but I have not hitherto told you what I have been doing since I came out to Africa, and so let me say I have had several long letters from readers of the B.B.J. since my address appeared, asking for advice and about prospects of farming in general, and bee-keeping in particular. I believe I have answered all of them, but my time is so much taken up with work that I could not answer so fully as I wish, but hope they have all taken the will for the deed.

Regarding bee-keeping, the conditions out here are so very different from those at home that it is like starting afresh. I have a lot to learn respecting the bee seasons and honey-producing flowers, all being quite unlike those at home; and there is no light and leading in the shape of bee journals or a book of any kind on the craft. Indeed, I found very few who can give you any reliable information on the subject. With me, therefore, it has been a case of "making haste slowly." One of your readers wrote me, asking for the "names of any bee-farmers that I knew?" But I don't think there is a single bee-farm anywhere about here, or anything that can, by any stretch of imagination, be described as such. I gathered some information from an agent here about two brothers who intended to start a bee-farm, going so far to order, through my informant, over 70 pounds worth of hives and appliances from a London firm; but when the goods reached here the money was, I believe, not forthcoming; consequently the appliances were left on his hands. After some negotiation my late employer, on my recommendation, bought the lot for £35, some one must therefore have dropped money over this "deal." So I give the hint—appliance makers, beware! The hives thus bought were put together by myself, and about twenty of them stocked with wild bees which I captured on the place. When I left Blue Cliff some of them were working in the sections, but, from what I hear, very little has been done with them since. On coming out here I brought with me some frames and foundation, and made some twenty hives from used "Quaker Oats" boxes; time not allowing for this, we sent to Messrs. Blow, of Welwyn, and we have just received twenty-five hives and a lot of other appliances from them. Some I hope to fill with my own bees captured on the farm, and some will be sold. I am pleased to say the Agricultural Department of the Government gives every encouragement to bee-keeping, and are interested in all that can be done to forward the craft, as you will see by the enclosed letter. British bee-keepers have no need to fear that Africa will flood their market with honey, like some of the other Colonies. I have received the returns of imported honey and wax to this Colony, and although not a large amount, it shows we are a long way behind, in this as well as other things, in the production of the necessaries of life. The returns given were for honey in 1897, and amounted to 32,385 lb., value £845; bees-wax, 618 lb., value £40. When in Port Elizabeth the other day I purchased a pound bottle of honey for 1s. 6d., and the label showed that it was bottled and sent out by a London firm. I should judge by the appearance and taste it was some of the Australian honey sent home and bottled, and sent out here; so you see there is a fine sale and a good price to be had here.—J. Martin, *Expert, B.B.K.A., Bog Farm, Walmer, Port Elizabeth, S. Africa, January* 15, 1899.

WIRING FRAMES.

IS THREAD PREFERABLE TO WIRE?

[3485.] A correspondent signing himself "A Cockney Bee-keeper" asks, on page 33 (No. 3560), Is thread preferable to wire? Of course, "doctors will differ," and I tried thread two years ago when I was unable to

(*Continued on page* 56.)

BEE-KEEPING

AS A PURSUIT FOR LADIES.

There is no disguising the fact that apiculture has during the last few years been gradually growing in popular favour, and country-folk are becoming alive to the importance of fostering our minor rural industries. Of these bee-keeping is, perhaps, the most worthy of attention, whether from a monetary point of view or as a pleasurable pastime. It is admitted on all sides that no hobby or pursuit (business or otherwise) gives so handsome a return for the money and time expended as a few well-kept stocks of bees. The cause of this rising popularity is, no doubt, due to two reasons: first, that bees,

H. W. Brice.] DRIVING BEES. [*Copyright.*

H. W. Brice.] AFTER THE PROCESS. [*Copyright.*

their ways, and requirements are better understood than was the case a decade ago ; second, that modern appliances have facilitated the easy management of bees, and at the same time increased the income to be derived therefrom ; and what with bee veils, to protect the face from all possibility of a chance sting, the "smoker," for completely subduing the bees, and the teachings given by the various county bee-keeping associations, the avocation has become almost a kodakial one, with a motto of "You keep bees, we do the rest." Small incomes may be considerably added to by so doing, and the great good accruing to crops by the instrumentality of bees in the way of fertilising the blossoms of fruit and other trees and plants, is now fully recognised ; so much so, that in most of our agricultural colleges bee-keeping holds quite an important position in the teaching afforded by these institutions, lady students being exceedingly successful in this particular branch of the work.

The British Bee-keeper's Association and the county associations affiliated thereto have done and are doing much good in pressing forward the claims of apiculture, and the parent association holds examinations in rural centres annually for the purpose of granting certificates to candidates who show sufficient practical and scientific knowledge to qualify them to act as representative "experts" of that body. Many ladies have obtained these certificates.

Our illustrations lend force to the above remarks, and show that, without veil or any protection whatever, even the weaker sex may make bee-keeping their own special hobby. Here we have (1) a representation of driving bees from the almost obsolete straw hive or skep, (2) the bees when driven, showing the empty combs ; and (3) rehiving the bees into a modern frame hive. The operation of "driving" is at times necessary, especially in the autumn, to save the bees from being destroyed over the sulphur pit, which hitherto has been a common practice with cottagers. The method of driving bees will be gathered from the following : The skep or hive containing the bees is inverted on a box or table, and an empty skep is fixed at an angle so as to facilitate the ascent of the bees. The sides of the hive are now smartly rapped, and the bees, being alarmed, are easily drummed out of their erstwhile house and home. As will be seen, the final operation is rehiving the bees, and here it is necessary to ascertain that the queen is uninjured, and that she safely enters the new home of the bees ; as, should she be lost, the prosperity of the colony would be gone. This is understandable when we explain that the queen is the mother of all the bees, and lays all the eggs ; and as only one queen is permitted to be in each hive at one time, the loss of this one insect means ruin to the stock for want of young bees to take the place of those that are lost, so that the bees gradually die out altogether.

H. W. Brice.] RE-HIVING "DRIVEN" BEES. [*Copyright.*

Ladies will do well to take this matter into their consideration. They make, as already stated, excellent and most capable bee-keepers, as is evidenced by the fact that both in this country and America some of the best-kept and most successful apiaries are those belonging to women-folk.—HENRY W. BRICE. (From *Country Life*)

(*Correspondence, continued from page* 53.)
get the right sort of wire. I used the small white twine used by grocers, but with me, as with Mr. W. F. Reid, it was a failure. Last season I tried another plan. I got some tailor's "yellow twist," then melted some beeswax in a jam-pot, leaving it upon the stove till the wax came to the boil. I then put in the twist and boiled the wax well into it, then removed and run it round a reel. I then used the waxed thread upon about a dozen frames, and not one was gnawed off by the bees. The combs also stood the extractor well. In fixing foundation in frames I use a small bradawl to make two holes at each side or end of frames on the outside; these two holes are made to run into one on the inside, so as to have the two threads quite close together at about 2 in. from the bottom bar. I never use more than that amount of support, and never had one break-down after using it with some hundreds of combs last season with the waxed twist in the extractor.

The bees seemed to rather like the waxed thread for they embedded it so that you can scarcely see it in the combs. It is also much nicer to use than wire, besides being so simple. Mr. Reid's plan of coating the thread with an elastic substance is no doubt the strongest, but where are we to obtain this substance? Mr. Reid I know to be no ordinary man; he is an expert authority on those mineral substances, and could I suppose fill the BEE JOURNAL twice over with good practical knowledge on the use of celluloid for bee-keepers. I had the privilege of visiting Mr. Reid's house some two years ago and spent one of the most instructive evenings of my life there seeing the many things he had made for his own use in bee-keeping. There were bee-escapes, queen-excluders, a substance for coating hives to keep out wet, all made from celluloid. There was also a press for making his own foundation. I asked Mr. Reid at the time if he would not allow some of his good things to appear in the JOURNAL, but he would not consent as he does not like publicity, but now he has started I hope he will help us all as he can I am sure.

Before concluding I should like to say a word about the "sale of honey" this season; I quite agree with Mr. W. Woodley in thinking that the public Press has a little overdone the cry about dark honey. It has, I think, done harm in many districts. I myself lost a good customer owing to the lady having heard about what the honey dew of last season consists of. When I wrote this customer as usual about honey, I got a reply to say, "I see English honey this season is not pure, so I am using Scotch honey, and we like it." That reply lost me the sale of about 40 lb. of extracted honey. I am pleased to say, however, I have sold about 300 lb. at full price, and have only about 20 lb. left. I only had a few black sections, but all my extracted was very good—mostly from the limes.

I have shifted my bees a little further from the railway, and hope by so doing not to have so many in midsummer knocked down by the force of the trains. I am trying the experiment of not using any quilts next or on top of frames with four of my hives this winter, using instead a 1-in. thick crown board, with ½-in. space on top-bars. I have a 3-in. hole drilled through the crown board, so that I can feed with either candy or syrup. I use no covering on top of board, but lay strips of felt 1-in. wide round the edges, and set the board upon that, so it is nearly air-tight. I have put my hand beneath the covering with 12 deg. of frost on the ground, and the boards were quite warm; no dampness there.—A. H. MILLER, *Egham, February* 6.

BEE-PROOF THREAD.

FOR FIXING FOUNDATION IN FRAMES.

[3486.] May I in B.B.J. pages ask if your correspondent. Mr. Reid (3473, p. 43) sells the bee-proof thread mentioned by him, or the substance wherewith to coat it? If he would kindly say in your columns it would no doubt greatly oblige many readers besides myself.

In sending bees long distances to the heather, unless the combs are old and tough, they are apt to break down if not wired. I have tried lint thread as a substitute for wire, but the bees always tore it to pieces. I also tried coating thread with shellac varnish, but having to leave the neighbourhood shortly afterwards, I am unable to say whether it would answer the purpose or not.

I see that the honey-dew question is still cropping up in your pages. Last year my bees gathered nothing else from the end of April to end of June, but, as far as I could ascertain, very little of it was gathered from the secretion of the aphids. It principally came from the leaves of the common laurel; and while bees were working on these, if you placed your finger against either side of the mid-rib of the leaf, you could feel a sticky substance that had a sweet, harsh taste. There was plenty of clover-bloom at the time, but the bees would not look at it. The only real honey-flow here was during the ten days that limes were in bloom, when the bees gathered good honey at Doonfoot.—J. GUTHRIE, *Ayr, N.B., February* 6.

MY "HONEY TAKE" FOR 1898.

[3487.] I have this season taken rather over 200 lb. of honey similar to sample enclosed from the one "Wells" hive in my apiary. Each stock filled three boxes of shallow-frames, all of which was so thick that I was unable to extract it in the ordinary way, but had to melt it down, combs and all. I think you will agree with me in considering that both quality and quantity are very good for such a season as was experienced in Kent in

1898. All the other stocks did nothing but swarm, beginning the season with five stocks and the "Wells," I finished up with eighteen. I got a few sections from one or two of the swarms, my whole take amounting to just 300 lb.

Would honey similar to sample stand any chance of prize-winning at a show like the "Royal"?—H. M. K., *Dover, January* 20.

[Sample of honey is capital in colour and very dense in consistence. The flavour is also good, especially considering the melting process it has undergone. Its chances of winning at Maidstone in June will of course be largely governed by what is staged in competition with it.—EDS.]

PARTHENOGENESIS

VERSUS THE NEW "DICKEL" THEORY.*

By R. Hamlyn-Harris, F.E.S., Member of the International Entomological Society of Guben, &c.

The subject on which I propose to address you is agitating the minds of all German bee-keepers just now, and is, if possible, exciting a still greater interest amongst naturalists and men of science.

It has also been somewhat widely discussed in German papers, and is beginning to attract attention of scientific bee-keepers in England; you may therefore be interested in hearing something about it.

My idea, before going to Germany this last time, was that the Germans might have something to teach us with regard to bee-keeping, but the observations I have been able to take during my short stay has convinced me that we are in advance of them, both in practical work and *soundness* of theory.

I do not for a moment deny that in Germany a very wide interest is taken in the theory and scientific investigation of bee-keeping; indeed, this is perhaps carried to excess, so much so that German bee-keepers are always seeking for some new thing, and are ever on the look out for the discovery of new theories. One of these which is at present finding favour has been put forward by a Mr. Dickel, and has aroused an amount of interest which, to my mind, which is hardly justified by the slender evidence on which it is based!

If Mr. Dickel's theory could be proved it would entirely upset that *of Parthenogenesis*, a theory which has been received as an established fact by all writers on the subject since it was first formulated by Dr. Dzierzon, in 1845—thus covering a period of fifty-four years—after three years of most searching experiments, the results of which have been verified by the experience of all those who have been actively engaged in queen-rearing in all parts of the world.

In view of this we cannot be blamed for approaching with some degree of caution an idea which not only seeks to supplant so well established a theory as that of Dr. Dzierzon, but would also entirely revolutionise our former conception of the laws which govern the determination of sex in bees.

Stated briefly the theory of Parthenogenesis is this:—The queen after she has once been mated can lay at will two kinds of eggs, *i.e.*, *fertilised* and *unfertilised*, the former of which produce females, the latter males.

On the other hand, what I may term the rival theory which Mr. Dickel now puts forward, he very confidently asserts that it only needs stating to be accepted and received. But in order that I may place his ideas quite fairly before you, I give the chief points of his so-called discovery, as far as possible, in his own words. He says:—(1) "The fertile queen-bee lays *only fertile eggs*, the fate of which depends *solely* upon the worker bee, which alone has the power of *determining the sex* of the resultant insect. (2) This power is exercised through the medium of two pairs of glands, one pair of which *secretes* the needful element for the production of drones, the other that necessary to produce queens and workers only. The secretion referred to is supplied *during the hermaphrodite stage of the larva*, and continued until the commencement of the nymph stage; the ultimate determination of sex being brought about by the secretion of *both these glandular forms*. (3). In the case of unfertile eggs, that is eggs laid by unmated queens or by "fertile" workers, *only drones can result*.

"These drones, however, are *abnormal*, and by no means the same as those produced from fertile eggs. The normal drone possesses, of course, perfect generative organs, but in the '*abnormal*' *insect these are wanting*. Up to the present no such distinction has been made."

The above is a fair and impartial statement of Mr. Dickel's case as given in the German papers, and we will now examine briefly the basis on which this revolutionary theory is founded. This consists of a series of experiments—extending over a period of about one year — and which may be enumerated as follows:—

"*Experiment* 1.—A strong, queenless stock having no trace of brood was on August 21, 1898, transferred to an observatory hive, into which a piece of newly-built comb with eggs was inserted, with the intention of forcing the bees to rear another queen. On August 27 two queen-cells were found on the newly-introduced comb, together with sealed and unsealed brood of both workers and drones. From one of the queen-cells mentioned a very strong and fine queen hatched out, and was mated during September probably with a drone reared from the same stock. The inference drawn from this experiment is that the eggs inserted were only of *one kind*, and

* An address delivered at the annual meeting of the Bristol and South Gloucestershire B.K.A.

that the worker bees reared at *their* discretion a number of drones as consorts for the future sovereign of the colony."

"*Experiment* 2.—A stock with a healthy queen was hived on drone-comb only, and in the course of a few days, the queen had nearly filled two of these combs with eggs. She then disappeared—the bees having killed her. As a result, two-thirds of these eggs produced workers, and one-third drones, the whole being mixed up indiscriminately. The *inference* is that, so long as the queen was alive, the bees reared workers only, but on her death they reared drones, and also built a number of queen cells."

"*Experiment* 3.—A colony was placed for some time on combs containing chiefly drone cells; on September 3 this hive was examined. It then contained only sealed worker-brood, nor was there a single cell which could have contained a drone. The queen was then removed and the hive closed up. Four days later the hive was again examined, and seven queen cells and some nearly perfect drones were then found. These could not possibly have been reared from eggs, for which a period of four days would have been too short. The *inference*, therefore, is that worker bees have also the power of raising drones from workers *in the larval stage*, and the insect must therefore be *hermaphrodite* until it reaches the nymph stage."

The above are a few only, of course, of the many experiments made, but they will serve as a type of the rest; it would take too long to refute them individually—indeed, to my mind, they seem to refute themselves, as, for instance, in experiment 1, the "inference" that the eggs inserted were of one kind only, and that the workers reared from them at their discretion, either drones or females, begs the whole question, and takes for granted that which it seeks to prove; for who can tell that the comb did not contain some unfertilised eggs? Indeed, Mr. Dickel seems to me to have founded a most startling theory on small and insufficient evidence—rearing a huge inverted pyramid on a very small apex; for it is against all former experience that the worker bee should have this power in determining sex—a thing which Nature has always kept in its own hands, and the secret of which man has wearied himself in vain to discover.

At the same time, we do not dispute these experiments; but one swallow does not make a summer, and before such an extraordinary theory as this can be universally accepted, it must be proved to hold good in every case.

There is also the anatomy of the bee to be taken into account, and the upholders of this theory will have to explain the uses of certain organs in the queen's anatomy which have hitherto been supposed to exercise an influence in the determination of sex. They will also be placed on the horns of this further dilemma, viz., the smallest insect which Nature creates has its uses and its functions to perform, while the "abnormal drone"—as this poor nondescript is called—can have absolutely no purpose in life, and no excuse for ever coming into existence at all!

I nevertheless trust that as seekers after truth we will not allow our insular prejudice to stand in the way of a careful and unprejudiced investigation of our Teutonic neighbours' ideas. Let us investigate and experiment for ourselves, and endeavour to find out if there is any truth in the matter I have dealt with.

For myself, I have made arrangements to test the matter thoroughly in England and in Germany, as it may be the Teutonic bee is somewhat more irregular in his habits than his English cousin.

It is an invidious task to assume the mantle of prophecy, and I have always found it safest to wait till after the event before recording my predictions. I will, however, venture to hope that the experiments which we propose to make will refute this discovery (?), and confirm once and for all, in our own minds at least, Dzierzon's theory of parthenogenesis, which has for so long held the field.

METEOROLOGICAL

Observations taken at Duddington, Stamford, Northants, for the Week ending Feb. 4, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Jan. 29....	30·04	36·8	42	32	10	37·2	·13
,, 30....	29·91	38·2	47	36	11	41·7	·08
,, 31....	29·74	36·0	40	33	7	36·6	—
Feb. 1....	29·43	34·4	39	33	6	36·0	·04?*
,, 2....	29·41	32·2	38	28	10	33·0	·01*
,, 3....	29·72	30·9	39	26	13	32·5	—
,, 4....	29·98	22·0	36	19	17	27·5	·09*
Means	29·75	32·9	40·1	29·6	10·5	34·9	·35?†

* Snow. † Total, ·35 (?).

The rainfall, viz., ·35 in., =7,918·05 gallons, or 35·35 tons to the acre, or 1·75 lb. to the square foot. For the week ending January 28, the mean temp., viz., 36°·6, was − 0°·7, and the rainfall, viz., ·06 in., −·43 in. The mean temp., January 1 to 28, viz., 40°·4, is +3°·7, and the rainfall, viz., 2·36 in., is + ·57 in.

Results of Meteorological Observations for January, 1899.

Barometer.

Highest, 30·64 in., on the 26th.
Lowest, 28·81 in., on the 2nd.
Range, 1·83 in.
Average height, 29·70 in.

Thermometers.

Highest Max. Shade Temp., 55 deg., on the 20th and 21st.
Lowest Max. Shade Temp., 37 deg., on the 28th.
Highest Min. Shade Temp., 47 deg., on the 22nd.
Lowest Min. Shade Temp., 20 deg., on the 25th.
Range, 35 deg.
Greatest Daily Range, 20 deg., on the 6th, 15th, 18th, and 26th.
Least Daily Range, 2 deg., on the 23rd.
Highest Shade Temp. at 9 a.m., 53·1 deg., on the 21st.

Lowest Shade Temp. at 9 a.m., 22 deg., on the 25th.
Highest Mean Daily Temp., 49·2 deg., on the 21st.
Lowest Mean Daily Temp., 29·4 deg., on the 25th.
Mean of Highest Daily Readings, 46 deg.
Mean of Lowest Daily Readings, 33·6 deg.
Mean of Daily Range of Temp., 12·4 deg.
Mean Temp. of the Month, 39·8 deg.
Mean of Dry Bulb (9 a.m.) Readings, 38·8 deg.
Number of Days Frost in Shade, 11.

Rainfall.

Number of days on which ·01 in. or more fell, 24.
Greatest Fall in Twenty-four Hours, 0·47 in., on the 11th*
Total Fall in the Month, 2·57 in.†

The mean temp., viz., 39·8 deg., is +3·6 deg.; and the rainfall, viz., 2·57 in, + ·68 in.

* ·47 in. = 10,632·81 gallons, or 47·47 tons to the acre, or 2 35 lb. to the square foot.

† 2·57 in. = 59,140·11 gallons, or 258·57 tons to the acre, or 12·85 lb. to the square foot.

FRED. COVENTRY.

Duddington, Stamford, February 6th, 1899.

WEATHER REPORT.

WESTBOURNE, SUSSEX.

JANUARY, 1899.

Rainfall, 3·66 in.
Heaviest fall, ·63 in., on 15th.
Rain fell on 23 days.
Above average, 1·33 in.
Maximum Temperature, 52°, on 9th.
Minimum Temperature, 27°, on 26th.
Minimum on Grass, 20°, on 26th.
Frosty Nights, 13.
Sunshine, 80·3 hrs.
Brightest day, 27th, 7·5 hours.

Sunless Days, 8.
Above average, 10·8 hours.
Mean Maximum, 44·5°.
Mean Minimum 35°.
Mean Temperature, 39·7°.
Above average, 4·2°.
Maximum Barometer, 30·64°, on 26th.
Minimum Barometer 28·76°, on 2nd.

L. B. BIRKETT.

Queries and Replies.

[2154.] *Medicating Bee-food — Age of Queens and Cutting out Queen Cells.*—I shall be very pleased to have your opinion on the following :—1. Leaving foul brood out of the question, do you consider that medicated food is beneficial to the bees? I find that one authority declares this to be so, and attributes it to the fact that bees are subject to several minor ailments (of which little is known), which are benefited or cured by medicating the food given with naphthol beta. 2. Last year five of my stocks had the first swarm returned to their hives, and the bees did not again issue, although in no case were the queen-cells cut out. Do you consider it would be a safe rule to rely upon present queens being those raised in 1898, or, is there a chance of the young queens having been killed by the original ones? I see one authority states that a fertile queen has not the least chance in a stinging match with a recently hatched one. 3. In every case where I have proceeded to remove queen-cells out of a hive an hour or two after the issue of a swarm, I have found the young queens either already at liberty, or had left the cells faster than I could cut them out (the bees are natives). Is this usual?—"BEE," *Flixton, near Manchester, January* 31.

REPLY.—1. Medicated food is beneficial inasmuch as it practically secures bees from disease, but in no other way. 2. No. We cannot say without seeing the queens. 3. Not with first swarms in good weather, though quite common with casts.

[2155.] *Using Excluder Zinc below Sections.*—I always used, previous to the season of '98, excluder zinc below my queen-racks of sections as I believed that it hampered the bees in getting quickly to work in the sections. Last season, however, I discarded it, and, in consequence, had about three per cent. of the sections spoiled by the queen depositing eggs in them. I therefore ask (1), Is that usual? I may also mention that I fit the sections three parts full of foundation, and generally the bees fill in the lower quarter of the section where there was no foundation with drone-combs, in which the queen deposited her eggs. 2. I would be very pleased to know what amount of foundation the prominent bee-keepers use when fitting up sections, and perhaps one or two of your leading contributors would write a line of reply in the BEE JOURNAL, which would be regarded as a favour by many readers and by—J. D., *Wexford, January* 30.

REPLY.—1. Brood in sections is not at all uncommon, especially in poor seasons. 2. Full sheets are generally used by large producers; but it is a question of opinion, with something to be said on both sides.

QUEEN-RAISING.

G. M DOOLITTLE'S METHOD OF QUEEN-REARING IN A NUTSHELL.

Before me lies the following letter :—"I read in November 15 *Gleanings* Doolittle's latest feats in queen-rearing. I have his book on queen-rearing, 1889 edition. Has he any improvement over plans there suggested? I practise many of his plans; but my experience nine years ago, in rearing queens in hives containing queens, was not very satisfactory. I want the latest."—R. WILKIN, *Newhall, Cal., November* 30, 1898.

The above is a letter written to the A. I. Root Co., and forwarded to me to "draw me out," as there seems to be a thought on the part of many that Doolittle is not now practising, for queen-rearing, just what he gave in "Scientific Queen-rearing" about ten years ago. As the Roots and myself did not think Bro. W. would object to his letter appearing in print they have taken the liberty of publishing it, and I have taken it as a text to tell the readers of *Gleanings*, and Bro. Wilkin in particular, just how those "600

sealed cells from that one colony, the queen laying all the while," as Dr. Miller puts it in "Stray Straws," were reared.

These queens (for every cell hatched out a perfect queen) were reared just as described in the "1889 edition" of my book, and just as I rear 999 out of every 1,000 queens. Indeed, I practice no other plan, not even saving natural swarming-cells, for, as a rule, these latter do not prove so good as those reared by bees in an upper story, with a laying queen below all the time.

Now, lest some one may think this is a "puff" for my book I wish to say that I have had nothing to do with the book since it went into the publisher's hands. I then sent it free and broadcast over the world, with the hope that it might do the world some good, but having no pecuniary interest in it since, nor any other, except that it is my "baby." It has been a "loss to know" matter with me for a long time why a few did not succeed with a plan which is so perfect in my hands, yet so simple withal; and all I shall attempt to do in this article will be to go over the ground covered in the book a little more minutely, as I have no improvements over what is there given. Since the book first appeared I have paid very little thought to queen-rearing, my whole life and experiments since then being put into studying about the non-swarming of bees; and if I ever succeed along this *non-swarming* line, Providence sparing my life, I shall give that to the world in book form also. With this long preliminary I now tell "how I rear queens."

When spring opens I select one of the strongest colonies I have in the yard, and one having a queen reared the summer before, as I wish one which is not liable to fail in her egg-laying powers before the season is over, as that *laying* queen below has very much to do with queens of the *best* quality, in my opinion.

About the 10th to the middle of May I examine several hives till I find the number of combs of *sealed* brood necessary to take the place of those having no brood in them in the hive selected, which is generally from two to four. These combs of brood (without bees) are now set in the hive, and in a week or ten days I have a colony strong enough to commence operations. I may say just here that I use nine Gallup frames in this hive, and that I bring from my out-apiary some time before the particular queen to rule over the queen-rearing hive. This selected queen, is a mismated or hybrid one, for I find that hybrid bees, showing about as many black bees as those with yellow bands, will build and complete nearly double the number of cells as will pure Italians, and seem to take to this line of work better than any other. I usually bring several queens of this class to take the place of those sold, and then select the strongest colony having one of these queens. When the selection is made the rest are used in the out-apiary again. I mention this only as I wish to describe everything just as I do it.

As soon as the colony is strong enough to go into the upper story I remove two combs from below, having *mostly* eggs and unsealed larvæ in them (don't take any drone larvæ, as drones above a queen-excluder are always a nuisance), and in their places put two combs of sealed brood from other hives, as we wish all the bees possible thus early in the season.

I now put on top of the hive a hive having a queen-excluder *nailed* on to its underside (if thus nailed, the excluder comes off with the upper hive, if we wish to remove the latter during the season), and in the centre of this upper hive put the two combs of brood, four frames well filled with honey, a division-board feeder, and two dummies of inch or ⅞ lumber.

When about two days have elapsed for the colony to adjust itself to the new conditions, the bees are given about a pint of *thin* syrup every night, if honey is not coming in from the field, they are ready for a batch of prepared cell-cups, as stated in my book. To tell all about how to prepare these would be too long here, but by turning to chapter 7 of the book full details will be found.

(*Conclusion next week.*)

MESSRS. T. B. BLOW & CO.'S HIVE WORKS.

We are now enabled to announce that Messrs. T. B. Blow & Co.'s extensive bee-hive works at Welwyn, Herts—which readers will remember were completely destroyed by fire last autumn—are now rebuilt and fully equipped with new machinery, &c., of the most approved kind.

Orders for the coming season will, therefore, be executed with every possible expedition, and in the best style of workmanship.

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

ELGIN (Morayshire).—Without knowing anything of the quality of the honey your friend will, no doubt, obtain by "ordering in London" produce supposed to be gathered in Narbonne, we may say that *genuine* Narbonne honey is now generally regarded by bee-keepers much in the same light as that from the famed Mount Hymettus, where we are told no bees have been kept for many years past.

Advising Beginners in Bee-Keeping.—Mr. O. Puck, Handsworth-avenue, Hale End, Chingford, writes:—"With regard to the reply given to your correspondent, 'F. E. R' (Walthamstow), in BEE JOURNAL of February 2 (page 50), if you will give him my address I shall be glad if I can be of any assistance to him."

Editorial, Notices, &c.

LANCASHIRE AND CHESHIRE B.K.A.

PROPOSED SEPARATION OF THE TWO COUNTIES.

A meeting of the Lancashire section of the above association was held at Chapman's Restaurant, Eberle-street, Liverpool, on Saturday, February 4. Willm. Tyrer, Esq. J.P. (Chairman of the L. and C. B.K.A.), presided. Among those present were Messrs. Geo. Roberts (Broad Green), Geo. Rose (Liverpool), F. H. Taylor (Manchester), James M. Bold (West Derby), J. F. Williamson (Fleetwood), Wm. Forrester (Huyton), A. M. Fielding (Southport), Fredk. Round (Southport), Thos. Mottram (Heaton Mersey), Alfd. Jones (Birkdale), and others. The Chairman said the printed circular they had received would explain the object of that meeting. It appeared that a number of the Cheshire members of the L. and C. B.K.A. had met and decided to form a separate association of their own, to be called the Cheshire B.K.A. In view of this decision they intended to bring forward a proposition to that effect at the annual meeting of the L. and C. B.K.A., to be held during the present month. The Lancashire members of the Committee, while regretting this step, were desirous of avoiding any friction, and consequently the proposition would, no doubt, be passed without opposition. Consequently, it devolved upon the Lancashire section to ascertain whether or not sufficient encouragement would be afforded to warrant the formation of a new association for the purpose of promoting the work of bee-keeping in the county of Lancaster. In response to a request he had addressed to the members nearly 100 favourable replies had been received. He (the Chairman) had also received many encouraging letters from the Rev. T. Slevan, Mr. W. H. Johnson, and others, in favour of their present movement. It was then proposed by Mr. A. M. Fielding, and seconded by Mr. Geo. Roberts, and carried unanimously, that a new association be formed for Lancashire. The Chairman then said the next important business was the election of hon. sec., and the name of one gentleman had occurred to him as a most suitable one—viz., Mr. F. H. Taylor, of Manchester. Mr. Rose proposed, and Mr. Bold seconded, the nomination of Mr. Taylor as hon. sec.; but before the motion was put, Mr. Taylor expressed some doubt whether he could attend the meetings unless held on Saturdays. However, after some further observations by several gentlemen present, Mr. Taylor consented to act as hon. sec. *pro tem.*, and Mr. Rose's motion was carried unanimously. Mr. A. M. Fielding, accountant, Southport, was then voted to the office of hon. treasurer, *nem. con.* The hon. sec. was instructed to write to the Lancashire patrons and vice-presidents, asking them to continue their support.

The meeting concluded with votes of thanks to the chairman and to Mr. Chapman for the use of the room.

As soon as convenient after the annual meeting of the L. and C. B.K.A., a meeting of those interested in the new Lancashire Association will be held to elect officers. I am also requested to ask all bee-keepers in the County of Lancaster desirous of joining the new association, who have not yet signified their intentions to the chairman, to communicate with me at once, in order that the plan for the expert's tour may be completed as speedily as possible.—FREDERICK H. TAYLOR, Hon. Sec. (*pro tem.*), *Birch Fold Cottage, Old Hall-lane, Fallowfield, Manchester, February* 8.

SOUTH OF SCOTLAND B.K.A.

ANNUAL MEETING.

The annual general meeting of the above association was held on Saturday, February 4, in Kerr's Temperance Hotel, Dumfries, Mr. Ross being called upon to occupy the chair. There was a good attendance of bee-keepers present. Much satisfaction was felt at the favourable character of the treasurer's report as read, which showed that the business of the society had been conducted to the best advantage of the members, and reflected credit on the secretary and treasurer. The following office bearers were elected for the ensuing year:—Hon. Presidents: Sir Mark McTaggart Stewart, Bart, of Southwick, M.P.; Sir Thos. D. Gibson-Carmichael, Bart., Castlecraig, Dolphinton, M.P.; and W. J. Maxwell, Esq., Terraughtie, Dumfries. President: Mr. John Ross, Barkerland, Dumfries. Vice-Presidents; Jas. R. W. Wallace, Esq., Auchenbrack, Thornhill; W. M. Wright, Esq., Charnwood, Dumfries; J. T. Aitchison, Esq., Queen's-place, Dumfries. Hon. treasurer: Mr. George Crichton, Troquar, Dumfries; hon. secretary: Mr. James Kerr, Balmoral-road, Dumfries; committee: Messrs. Wm. Jardine, Greenbrae; John McDonald, Lochfoot; Wm. Hogg, Castle Douglas; J. Smith, Thornhill; J. Henderson, Maxwelltown; R. Grierson, Lochfoot; P. Jeffrey, Auldgirth; J. McMillan, Greenbrae; R. Service, Maxwelltown; J. Patterson, J. Brown, and J. Johnstone, of Dumfries. It was decided that the Seventh Annual Honey Show be held in conjunction with the Dumfriesshire and Galloway Horticultural Society's show on September 6, 1899. —JAMES KERR, secretary, *Balmoral-road, Dumfries, February* 10.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of January, 1898, was £2,736.—*From a return furnished to the* BRITISH BEE JOURNAL *by the Statistical Office, H.M. Customs.*

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

NOTES BY THE WAY.

[3588.] *Packing Sections for Transit.*—In reply to your correspondent "G. M. S." (3568, p. 36) I would say, first select your case, and take care that when packed it does not weigh over 1 cwt. One of Tate's "cube sugar" boxes (especially that sent with the new "No. 3" cheap sugar) holds six dozen sections nicely, and allows of more packing at the sides than their other boxes. In preparing to pack, the sections are first glazed, or if ordered unglazed (which seldom happens in our section-trade) protect the face of combs with pieces of thin board (such as is used when framing pictures) 8½ in. by 4¼ in. One such board is placed at each end of a dozen sections, and tied tightly round to prevent the boards from slipping and so injuring the face of the combs. The sections, if glazed, of course require no tying. Each parcel of a dozen sections is then wrapped in strong brown paper and securely tied with string. A wad of straw is then arranged at the bottom of box, and over it I sprinkle a little loose hay, thus forming together a good springy cushion about 1½ in. thick. On this cushion I put two of the parcels of sections mentioned above, and then pack them fairly tight all round with hay. Don't pack too tight or you may either crack the glass or squeeze the boards against the combs. When the hay comes nearly flush with the edge and sides of sections the packing may be somewhat tighter to prevent the parcels from shifting or shaking during transit. A second wad of hay or straw is then laid over all and another layer of sections placed thereon exactly as before, and finally the last two parcels, thus making up the six dozen in all. More hay is then put around and on the top, and the box is ready for the lid. I ought, however, to have said earlier, before packing put cord handles at each end of the box for convenience in handling. After nailing on the lid we always affix to it a plain, readable label denoting care in handling in addition to the ordinary address label. Another and smaller box, easily procurable from any grocer, is the "composite" candle-box, which needs no cord handles, as the cross-bar at top answers the purpose. This holds six parcels of eight sections each, and allows room for packing. For glass jars of extracted honey "condensed milk" cases are very suitable and safe for packing in.

The mild weather we are now suffering will induce breeding early this year, and suitable watering-places should be prepared for the bees in a sheltered, sunny nook of the apiary or garden. Any watertight vessel, such as an old milk-tin, answers for a water-trough, if a handful of broken corks are put in to float on surface; indeed, any contrivance (such as spent tea leaves in shallow trays) prevents the bees getting drowned when drinking, saves large numbers of bees, and helps to prevent spring dwindling. If natural sources of supply are at hand, of course no troughs are needed. I would once more draw attention to the fast-diminishing stores in hives; don't disturb the bees more than is absolutely necessary, but when bees are flying, taking a peep beneath the corners of quilts will tell if capped stores are still on hand; if so, all is well, and no disturbance is caused to the bees more than the same action would harm a trio of sleeping cherubs if their mother turned back the bed-clothes for a good-night kiss. Stocks put into winter quarters in the autumn with abundance of stores, and a note recorded for reference, may be left untouched; but where any doubt exists, it is better to risk a slight disturbance than find the colony starved to death at the end of next month. The B.B.J. is for ever teaching, preaching, counselling, expostulating on this point. Bee-keepers are told everything *in season*, but I fear that—like too much of other preaching—it is rarely followed and put into practice. However, it is these "shortcomings" that have to be attended to at what appears unseasonable times. Readers of former "Notes" of mine will remember I have often advised cutting an oblong strip out of quilt to form a feed-hole; when this is done, a cake of candy can always be placed over the cluster without either disturbing quilts or bees. If the latter are lively, a piece of glass can be laid over the feed-hole as the quilt is drawn aside, and the candy can be inverted over the glass, and glass withdrawn without killing a bee. The tempestuous winds and heavy rains have sorely tried the stability of hives and the strength of the bees. The other morning the sun came out quite warm, and bees were tempted out, many of them never to return; the wind swept them off the alighting-boards time after time, till they were chilled on the damp, cold ground, and became food for the tits, which came in for the feast.—W. Woodley, *Beedon, Newbury.*

THE "WELLS" SYSTEM.

A SUCCESSFUL EXPERIENCE WITH IT.

[3589.] In the year 1892, Mr. Wells, through the British Bee Journal, made public the system of bee-keeping which bears his name. In the following spring two "Wells" hives were stocked in my apiary. The hives were home-made, and one of them so inaccurate, either from bad workmanship or

shrinkage of unseasoned wood, that the bees united of themselves from below. The other has been tenanted ever since. By observing the principles laid down in Mr. Wells' pamphlet, I have experienced no greater difficulty in keeping bees under this system than in the single-queened colonies. On the other hand, the conveniences and economy of having two stocks under one roof are considerable. During the honey flow the ordinary surplus-chambers are put on and taken off with no more labour than must be applied to working a single stocked hive intelligently. I should also state that my apiary exists not solely for profit, but for all sorts of experiments, and no doubt if experiments were dropped profits would be increased, but at the same time bee-keeping would be robbed of much of its charm.

On comparing the yields of surplus honey from the single and "Wells" hives, the latter have, with me at least, been to the fore. In poor seasons, when single queen stocks barely stored enough for their winter supply, my double-queened hives each yielded from 30 lb. to 45 lb. of surplus honey. To ensure success, however, it is necessary to follow out carefully Mr. Wells' method, and in doing so I have not yet had a swarm from a double-queened hive, while for working up "casts" and for wintering driven bees, the Wells system, judged by my experience, is unrivalled.

In the autumn of 1897, two Wells hives were tenanted as follows:—In each an established stock was placed in one compartment of the brood-chamber, and two lots of driven bees inserted at the opposite end. In the following spring efforts were made to equalise the quantities of bees in both divisions of brood-chambers in each hive. During the year 1898 one of them yielded 145 lb., and the other 113 lb. of beautiful sealed surplus honey between them, and they also worked out 120 shallow combs for future use. A large firm bought all the honey, and asked for half-a-ton more. Matters of more importance to me than bee-keeping, such as removing into a new residence and the daily duties of my profession, denied that attention to the bees which they should have had, otherwise the success of this system would, no doubt, have been more emphatic. To-day (February 10) bees are busily carrying in pollen.—PEMBROKESHIRE RECTOR, *Feb.* 10.

WORKING "WELLS" HIVES.

HAVE BEES COMMON ACCESS TO SUPERS?

[3590.] In reply to your correspondents Mr. Lancelot Quayle (3549, p. 22), and "G. R. S." (3479 p. 46). Having used the "Wells" hive with and without a super common to the bees of both compartments, my experience is that both colonies should be about equal in strength if allowed access to a super common to both. If one lot of bees is much weaker than the other, this latter should not be supered until the bees get strong enough in numbers to be able to take their share of work in the surplus chamber. I find that the bees of the two lots mix very little, if at all, in the super, though it is open to both; in fact, as "G. R. S." says, each colony seems to tolerate the close proximity of its neighbour simply because there is no cause for quarrel.—W. LOVEDAY, *Hatfield Heath, Harlow, Essex, February* 6.

"WELLS" HIVES AND SWARMING.

BEE-GARDEN PICTURES AND "THE FAMILY."

[3591.] In the course of last summer I put a swarm (one a May swarm) into each compartment of a "Wells" hive having ten frames filled with wired foundation. In July a virgin swarm issued from one compartment (that which held the "May swarm"). I cut out all the queen cells I saw, and returned the bees in the evening. Eight days after they swarmed again, and I repeated the operation as before. The bees then appeared to settle down to "collar" work, and I looked for "peace"; but no—out they came for the third time about the end of the month. I was naturally getting rather tired of this sort of thing, for there was no end of trouble in upsetting the hive down to the brood-chamber, as, of course, I had supers on and excluder zinc between. So I simply threw the swarm down in front in the evening without any interior preparation, and let the bees "run in." Rainy weather then set in, and I thought now all would surely go on well. This particular "Wells" hive was my best in regard to supers (I had other three "Wells"), but when reducing the number of frames for winter I found, to my surprise, hardly a hundred bees on the combs; no queen, and instead of honey, almost every cell in the frames chokeful of pollen. The combs were thus quite useless for either breeding or storage, and, although it was their first season, I had just to throw them all into the melting-pot! I afterwards noticed that the perforations in the dummy-board were plugged up with propolis from the other side of the hive, where the bees seemed to be in a normal condition.

Now I ask, "Where were the bees" of the compartment dealt with?

Bee-Garden Pictures.—I see you have on p. 45 put an editorial "damper"—in your footnote—on friends sending pictures of their apiaries when "the family" is introduced in them. I am sorry at this; I think they are a charming feature, and rather make than mar them. When I read in the notes that usually frame the picture in your pages that (for instance) "my wife is in the right-hand corner, my daughter in the left, myself in the centre," the "corners" are the very first places I "go" for. Although in some cases (no doubt from the home work being done by an amateur)

it is little better than a "pious opinion" whether the "thing" you think you see is a human figure or only a hooded skep! But this fancy for figures may be simply a bachelor's "weakness." I trust, however, you will keep an "open door" for any that may be already in hand, although more people than the "boss" are depicted in them. I hope some day to be able to forward you one of mine for favour of insertion in this journal; and I guess you will not need to don the editorial black cap on that score, for, alas! there is no "Rose" nor "Mary" in my garden.

We do not in the north here much care to see an "auld head on young shoothers," yet I am tempted to give you a few home-made wrinkles after reading the reflections of that precocious bee-youth, "Military Bee" (3555, page 26), I have four years to my credit against his two-thirds of a twelvemonth. But, as I have already taken up too much of your valuable space, I will reserve them for a future letter.—N. Bee, *Stirling, February* 8.

["The compartment dealt with" of the "Wells" hive had evidently become queenless at a time when pollen was plentiful, and while in that condition the combs were pollen-choked by bees desperately anxious to secure a mother-bee. After failing in this, they (as so often happens in "Wells" hives) practically joined up with the bees next door.

We are sorry our correspondent "N. Bee" regards our hint regarding bee-garden pictures as a "damper." We only desired to put the matter as gently as we could because of having regard to the views of apiaries from the artistic standpoint. And from this point a sort of picnic being held at the "Homes of the Honey Bee" certainly is neither natural nor in good taste.

On the other hand, pictures already in print show that we do not yield even to our "bachelor" friend in his admiration for the occupant of the "corners," no matter whether wives, sisters, or daughters of the bee-man, so long as they share in the work of the apiary. What we desire is to see the "Homes of the Honey Bee" as they appear with the bee-keeper at work, and his ordinary helpers, whoever they may be, not having their "portraits" taken, but at work among the bees.—Eds]

BEE-PROOF THREAD.

[3592.] As one who has gained so much useful information from your columns, I feel that I ought to have been more explicit with regard to the bee-proof thread, of which I sent you a sample. It is crochet cotton coated with a substance named "velvril," which material is made by the Velvril Company, of Streatham-common. I have no doubt the company would give any information regarding the material referred to.

Unbleached linen thread would, I think, be better than cotton if it could be purchased free from dressing, which prevents the velvril solution from penetrating the fibre, and it is tedious work to boil the dressing out first. Horsehair is not a bad substitute for wire; but is difficult to fix, and is none too strong. I believe my previous letter answered most of W. R. V.'s enquiries, except with regard to excluders, which I think are not yet made in celluloid for the market.

Allow me to thank you for your thoughtful footnote, which has saved me much correspondence. One does not mind sending brother bee-keepers a sample, but time is valuable, and writing many letters absorbs much of it.—Walter F. Reid, *Fieldside, Addlestone, February* 8.

MARKETING SECTIONS.

A PACKING-BOX WANTED.

[3593.] With reference to packing sections of comb-honey, I have often thought that a light wood box made to hold half-a-dozen sections would be a great boon. The ends of box to be $\frac{1}{4}$ in. thick and full $4\frac{1}{4}$ in. deep; sides of $\frac{1}{8}$ in. thick and $3\frac{7}{8}$ in. deep, so as to allow the sections to be easily grasped for removal. Rim of cover to be $1\frac{1}{4}$ in. deep. I have many retail customers who buy half-a-dozen sections at a time, and such a box as the above would be appreciated by them for holding sections till required for the table.

I find the glazing of sections a rather troublesome business, and for such customers as those mentioned I think the box described would suit them better, and be of less expense to the bee-keeper. In view of this, I intend asking one of our appliance manufacturers for a price for making them, and if any of my fellow bee-keepers agree with me in thinking such a box desirable and useful, I would be glad to have it so stated in your columns. We might reasonably expect to have such a box offered to us in dealers' catalogues.—H. Patey, *Kingsbridge, February* 8.

(*Correspondence continued on page* 66.)

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Mr. Coates—a part of whose small apiary is shown below—may be taken as representing the large and very desirable class of our readers who are essentially men fond of home and home hobbies. Though but in his forty-ninth year, he was left a widower twenty-three years ago with an only son, now employed as as a clerk in the Midland Railway Co's office. A carpenter by trade, Mr. Coates finds time for prominently assisting in the work of Benefit Societies, especially that connected with the Order of Foresters, of which body he was appointed Chief Ranger (or chairman) of the Bath United District for the year 1897, having previously filled nearly every office in connection with the Order. He has also been

for many years on the committee of the local flower show; but although taking great interest in the flowers, he confines his "exhibiting" to live bees and honey.

Our friend's hobbies, then, are his flowers and his bees, and concerning the latter, in response to our usual request for "copy," he writes:—

"As to the 'text' you ask for, I am afraid I shall come out badly compared with some of our expert friends who have more time than myself to spare with the bees, and more broad acres of pasturage for them to revel in.

"Starting with an artificial swarm in June, 1891, I was then quite ignorant of working a bar-frame hive, but with Mr. Cowan's 'Guide Book' (lent me by a friend) and the BRITISH BEE JOURNAL I soon became able to do all the work that my little friends the bees required. In the year 1892 I chanced to come across Mr. J. Martin—then 'expert' to the Bristol B.K.A., but now in South Africa—taking a stray swarm from a tree in Bath. He afterwards called on me, and, after seeing my bees, advised my joining the Association, which I did, and am still a member. I have since assisted others to start in the 'hobby' by becoming members of the Association. I have also provided bees and assisted with the bee tent at our local show, at which I have taken many prizes. Being a carpenter by trade, I have always made my own hives, which you see are of several shapes; but all are made to take the standard frame. With me the 'Combination' hive holding from twelve to fifteen frames, seems to answer best. In working this hive in the spring I move all frames with brood and covered with bees up to the front of hive, then insert a sheet of queen excluder, in rear of which I put standard frames for extracting. I have found the bees work earlier on these frames than going up either into shallow frames or sections in other hives. I average 40 lb. of extracted honey from these hives, but did not take so much in '98 as other years. I can sell all the honey I get retail at from 9d. to 10d. per lb., sections 11d. each, but I only get a few of these.

"Three hundred yards from here stands a buildin formerly the Bath gaol, but now being worked as a confectionery factory, and in the months of August and September these premises swarm with bees, attracted by the scent to such an extent at times that the work-people have had to leave off working. There are, however, other bee-keepers near at hand, so they are not all from my hives; but no matter how that may be, many thousands of bees are lost there yearly.

"I have approached the management of the 'sweets' factory, who have promised to do something to stop the slaughter next year.

"Each autumn I take a trip into the country some seven miles from here, and drive about half-a-dozen skeps, by so doing keeping my hives up strong, which I find is necessary to get any surplus at all here."

MR. JAMES COATES'S APIARY, TIVERTON-ON-AVON, BATH.

CORRESPONDENCE.

(*Continued from page* 64).

WIRING FOUNDATION IN FRAMES.

[3594.] The use of wire for securing foundation to frames is undoubtedly the best method of preventing buckling or sagging, and also ensuring straight combs, that will stand extracting or rough handling in moving the hives. The difficulty with beginners is to find a simple method of attaching the wire to the frames, and a most important point is to take care that no loose ends are left sticking out of the outside of the frames, to possibly impale a queen or give infinite trouble to the workers in their attempts to remove it. To wire frames quickly a systematic plan must be adopted, and not having seen anything simpler than the one found effective in my own and other hives, after four years' trial, I send particulars of my method as follows, hoping that some of our experts will also favour us with their views on this question of wiring frames :—

Cut a stick (A, fig. 1) to just fit inside the

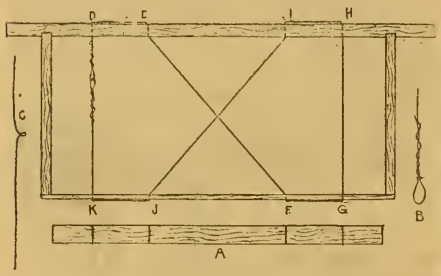


Fig. 1.

frame lengthways, and on this mark four lines in the position shown in sketch. Using this stick as a guide, next bore four holes with a fine bradawl through the top and bottom bars before making up the frame. If the top bar is grooved, the hole must be bored from the *inside* at an angle to miss the groove on the outside. When the frame is made up, form a loop on the end of the wire (as at B), uncoil sufficient for the frame, and break off the piece by making a "kink," as at C, and pulling it. Put the broken end of the wire through the hole D in the top bar, and, after pulling it up to the loop, thread the wire down through E and F, then up through G and H, and down through I and J, and up through K ; next put the end through loop, twist round the fingers, and pull pretty tight downwards, away from the loop. Now break off the end half an inch from the loop, and finally twist the end as shown in the sketch.

The explanation of process seems somewhat complicated, but with a little practice a bee-keeper will be able to wire frames "like shelling peas." For shallow frames, and when half sheets are used, the method of arranging the wire shown in Fig. 2 will be found ample ; in fact, where top-bars are grooved it will be found sufficient to secure the foundation in brood-frames, while it posesses the advantage of entirely concealing the wire.

With the method shown at Fig. 1, the bees have a tendency to clear a space of about a quarter inch between the comb and bottom-bar, thus leaving a short piece of the wires

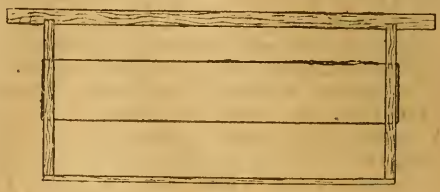


Fig 2.—Shallow-Frame Wired

exposed, which must be a source of annoyance to them. To embed the wire in the comb, cut a block of wood about one inch thick to fit loosely into the frame, then take a sheet of foundation, and after fitting into the groove of top-bar, secure in the usual manner ; lay the frame with the foundation resting on block, and the wires uppermost ; heat the embedder in the flame of a gas jet, or make a miniature furnace by heating a piece of gas-pipe in the fire. The embedder may then be thrust into the barrel of the pipe, the latter protecting it from soot or dust, but it must not be made hot, but just warm enough to press the wire into the foundation and embed it below the surface, when the wheel is run along the wire.

When frames are wired as in Fig. 1, the diagonal wires in the centre add greatly to the strength, and effectually prevent the frames getting out of square. The Association standard thickness of one-eighth inch for bottom-bars is rather thin for wired frames ; three-sixteenth inch, as supplied by some makers, being more suitable.—F. C., *Derby, February* 4.

HONEY-COMBS HIDDEN FOR FIFTY YEARS.

[3595.] I thank Mr. W. H. Harris (3558, p. 33), for drawing attention to the probability of the date of the closing of the hole in tree being "of more recent than fifty years." I have myself noticed the fact to which your correspondent calls attention, viz., that in many cases of either holes or wounds in trees the growth of many years gradually presses beyond and across the hole ; but there are exceptions, and I did not see this particular tree. As grubs were found in the combs, the probability is that the colony died of starvation at this time of the year, just as breeding was getting into full swing. No doubt many bee-keepers besides myself have come across good stocks in frame hives in February, starved to death, with brood in two or three combs. The hole in this tree referred to must have closed very soon after the death of the colony in question if we suppose the bees to have been starved to death previous to the closing of

the hole or the combs would not have been found in good condition, but would certainly have been destroyed by moths.

It was very pleasant to read the contribution (3484, p. 52) in B.B.J. of yesterday's date from Mr. J. Martin, of South Africa. I was thinking of him only the other day and wondering how he is getting on in his new home, and now that news has reached the B.J. I am sure many readers will join me in congratulating Mr. Martin on his success. If I remember rightly, he took some bees out with him, and it will be interesting to hear how his English bees take to the new conditions.

I have been hoping that the Rev. Dr. Bartrum would give readers of the B.B.J. his impressions of bees and bee-keeping in Japan as seen during his recent visit to that country. —W. Loveday, *Hatfield Heath, Harlow, Essex, February* 10.

OPPRESSION!

[3596.] Oppression! What is it? Can it be that anxious solicitude of a wife for her lord and master's comfort, so graphically depicted by "An Old Bee-Keeper" on page 37 of the Bee Journal, dated Jan. 26? Consider for a moment—a chair on which to rest, a pipe to smoke, a sitting-room in which to smoke it, and a considerate partner ready and willing to humble herself in the manner described. Pray, what *does* the man want? And why does he add the few closing words to his "letter of comfort"? Surely no one would expect to find "rosemary" flourishing in proximity to such a happy home. Oppression, indeed!—Honey Bee-Keeper, *January* 28, 1899.

"YOU KEEP BEES: WE DO THE REST."

[3597.] I, for one, am obliged to Mr. Brice for the pretty photos of the young lady driving bees in B.J. last week, but his comparing bee-keeping to photography on the lines of that "something" (I don't know how to describe him) who just says, "I press the button: you do the rest" is a bit "off." To use films and plates and send them "up" to be developed, and have prints made to show as "my work," is bad enough, and can't be too strongly condemned; but to suggest managing bees—live bees, not inanimate plates and films—is hardly the thing. I think, on second thoughts, Mr. Brice will surely allow that knowledge and ability in several directions are necessary for bee-keeping, independent of outside help, no matter how useful that may be.

When I was a boy my mother had a plate with a better motto on than the kodaker's. It was, "If you want your business done, *go!* if not, send." I used to puzzle over it, but light has since entered my thick head, and I know that anything to be properly done and success ensured, with the blessing of a kind Providence, must have prompt, personal attention.

In conclusion, may I just paraphrase the old song as

LINES SUGGESTED BY MR. BRICE'S PHOTOS.

"Where are you going, my pretty maid?"
"Going to drive some bees," she said.
"Ar'n't you afraid, my pretty maid?"
"Not in the least, you see," she said.
"Where shall you put them, my pretty maid?"
"Into a bar-frame hive," she said.
"How do you do this, my pretty maid?"
"Please look at the photos, sir," she said.
—John Kibble, *Charlbury, February* 13.

QUEEN-RAISING.

(*Concluded from page* 60.)

Before securing the royal jelly and the larvæ to transfer into it I prepare the hive by removing one of the dummies, shove the frames that way till I leave a frame's space between the combs of brood, when the cover is put on. As a rule it takes me from fifteen to twenty minutes to get the royal jelly, the larvæ, put the jelly and larvæ into the cell-cups, and get the now prepared frame to the prepared hive. I next remove the covering (which is a quilt, with a 4-in. sawdust cushion over it, and a hood or cap 8 in. deep over all), when I find the space left for the prepared frame completely filled with bees—so much so that I have to work the frame slowly up and down in lowering it, so as to cause the bees to run out of the way. I don't know that causing the bees to cluster in this vacant space between the frames of brood has anything to do with the matter; but it has always seemed to me that they are better prepared with royal jelly and for queen-rearing by doing so. Three days later I go to the hive again, take out the other dummy, draw the frames to the side of the hive till I come to the first frame having brood in it, when I lift the frame of cells, take off one or two of them, for the royal jelly needed to start the next "batch," when the frame of cells is placed in the vacant space behind the frame of brood, caused by taking out the dummy and drawing the others along, thus preparing the same place for the next frame of prepared cell-cups which the first one occupied, and when all ready it is placed there as was the first. Three days later a frame of honey is taken out from the opposite side from which the last dummy was taken, the frames again drawn along till we come to the frame of brood, when the last prepared frame of cells is taken out, one or two taken off for royal jelly, and the frame "jumped" to the outside of the frame of brood, which gives room for the third prepared frame between the frames of brood again, where it is placed as soon as prepared.

As I do no bee-work on Sundays I time it so that no cells have to come off that day, and so four days now elapse before I put in another prepared frame, which makes ten days

from the time we started, so that we really have only three prepared frames every ten days.

I now remove the frame of "ripe" cells, or the first one prepared, and distribute the latter where wanted, getting the bees off, &c., as given in chapters 8 and 9 of the book, when I lift out the two frames of brood, look them over to make sure that no queen-cells are started on these frames (unless this is done we *may* have a queen hatch when least expected and destroy all of the cells on the other prepared frames), when these two frames of now sealed brood are "jumped" over behind the two frames of cells now remaining. I now take out a frame of honey on each side, and shove all the frames along toward either side of the hive, so as to make room for two frames containing eggs and larvæ, taken from any hives in the yard (generally from nuclei when under full headway later on), which are placed in the centre of the hive again, as the first two were, being left apart for the fourth prepared frame, which is now fixed as was the others, and put in.

This tells you all about it, only that you keep right on in this way all the season, and the result should be with you, the same as I gave on page 849 of November 15, *Gleanings*. I see the Roots use colonies preparing to supersede their queen, but I have not used such a colony since the book was published, and do not see why others cannot succeed as well as I do with a *good* laying queen below, for I do not believe that the raising of queens in this way is any "trick" at all. Colonies worked as above given are quite likely to swarm under the pressure of bees given by their own queen and the inserted brood; and when they do so I simply take off the upper story, cut off all queen-cells started, cage the queen for ten days, cut the queen-cells again, and allow the bees to liberate her by eating out the candy from the stopper, as given in January 1, *Gleanings* for 1898.

As to feeding: I feed generally, to start with, till the frames in the upper story are quite well supplied with honey, unless honey is coming in quite freely from the fields, after which I rarely feed at all unless at times of real scarcity. That is, when enough is coming in from the fields so that no robber bees are about looking into hives as I open them, I do not feed, only for the first ten days, but feed at all times when nothing can be obtained from the fields.

Then there is a bare possibility that the deeper Gallup frame has something to do with it, but I think not. I have never tried so rearing queens at the out-apiary, for I use only the *one* colony at home, bringing brood from the out-apairy, if I wish to breed from any queen there.

If I have failed to make all plain, don't be afraid to ask questions, for on *good queens* hangs the greatest success in apiculture.—G. M. Doolittle in *Gleanings* (American).

METEOROLOGICAL

Observations taken at Duddington, Stamford, Northants, for the Week ending Feb. 11, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Feb. 5....	29·45	33·4	35	22	13	28·5	·03*
,, 6....	29·72	34·0	38	30	8	34·0	·46*
,, 7....	29·38	38·0	52	32	20	42·0	·14
,, 8....	29·32	46·5	53	38	15	45·5	·14
,, 9....	29·32	47·8	57	46	11	51·5	·10
,, 10....	29·35	55·5	62	46	16	54·0	·01
,, 11....	29·49	49·9	54	48	6	51·0	·06
Means	29·43	43·6	50·1	37·4	12 8	43·8	·94†

* Snow. † Total, ·94.

The rainfall, viz., ·94 in., =21,265·62 gallons, or 94·94 tons to the acre, or 4·70 lb. to the square foot. For the week ending February 4, the mean temp., viz., 34° 9, was − 2°·9, and the rainfall, viz., ·35 in., −·14 in. The mean temp., January 1 to February 4, viz., 39°·3, is +2°·4, and the rainfall, viz., 2·71 in., is + ·43 in.

Remarkable February Temperature.

February 2-5, 1899.

1899.	Temp. 9 a.m. deg.	Max. deg.	Min. deg.	Range. deg.	Mean. deg.
February 2	32·2	38	28	10	33·0
,, 3	30·9	39	26	13	32·5
,, 4	22·0	36	19	17	27·5
,, 5	33·4	35	22	13	28·5
Means	29·6	37·0	26·3	15 5	31·7

February 8-11, 1899.

1899.	Temp. 9 a.m. deg.	Max. deg.	Min. deg.	Range. deg.	Mean. deg.
February 8	46·5	53	38	15	45·5
,, 9	47·8	57	43	11	51·5
,, 10	55·5	62	46	16	54·0
,, 11	49·9	54	48	6	51·0
Means	49·9	56·5	44 5	12·0	50·5

Results of Meteorological Observations for the Year, 1898.

Barometer.

Highest, 30·55 in., Jan. 29.
Lowest, 28·80 in., Nov. 25.
Range, 1·75 in.
Average height, 29·94 in.

Thermometers.

Highest Max. Shade Temp., 90 deg., on Sept. 8.
Lowest Max. Shade Temp., 36 deg., on March 26.
Highest Min. Shade Temp., 64 deg., on Sept 8.
Lowest Min. Shade Temp., 19 deg., on Feb. 21 and 22.
Range, 21 deg.
Greatest Daily Range, 38 deg., Sept. 17.
Least Daily Range, 2 deg., on L 6 and 7.
Highest Shade Temp. at 9 a.m., . 5 deg., on Sept 8.
Lowest Shade Temp. at 9 a.m., 28 deg., on Dec. 23.
Highest Mean Daily Temp., 76·4 deg., on Sept. 8.
Lowest Mean Daily Temp., 29·5 deg., on Feb. 21.
Mean of Highest Daily Readings, 57·4 deg.
Mean of Lowest Daily Readings, 42·0 deg.
Mean of Daily Range of Temp., 15·4 deg.
Mean Temp. for the Year, 49·8 deg.

Number of Days Frost in Shade, 61.
Mean of Dry Bulb (9 a.m.) Readings, 49·2 deg.

Rainfall.

Number of days on which ·01 in. or more fell, 158.
Greatest Fall in Twenty-four Hours, 1·22 in., on Aug. 6.
Total Fall in the Year, 19·07 in.

The Mean Temp., viz., 49 8 deg., is + 1·4 deg.
Rainfall, viz., 19·07 in., – 7·31 in.

FRED. COVENTRY.

Duddington, Stamford, February 6th, 1899.

REMARKABLE INCIDENT.

Early in the "thirties" of the present century, there lived in a village some twenty miles from London a gentleman by birth and education, as education stood in those days. But he was lacking in one thing, and that was the simple faith in his Creator and his Saviour. One day a member of the family begged him—as she had many times before—to think more of the future, and to learn and trust in the Divine power; but he lightly replied, "it was all in good time, he would think of the future and of Heaven and hell, *when the bees swarmed in his bedroom.*" In the course of time (I cannot, being young then, remember how long) this gentleman was taken ill; he got worse from day to day, and while "sick, nigh unto death" on a bright summer's day, lying on a four-post bedstead, with the curtains and vallance suspended from the top, a swarm of bees on a bright summer-day entered the window of the sick room and settled in this hanging drapery. Now we do not know if he kept the promise he so lightly made, but we know this, that his Creator thought fit to call him hence before the sun had set on the day that "bees had swarmed in his bedroom."

[Seeing that so many "bee stories"—more or less mythical—appear in the daily Press, we deem it right to add, regarding the above remarkable incident, that the writer has been for many years a reader of our journals, and sends it to us "the simple narration of a fact," the accuracy of which he can vouch for.—EDS.]

Queries and Replies.

[2155.] *Ventilation of Hives.*—It has often occurred to me, when reading of apiarists using glass, celluloid, American cloth, &c, for quilts, to ask: "Do we ventilate our hives properly?" Again, it has been said in your pages that "if in the spring time moisture is seen running from hive entrance in the early morning the bees are strong and doing well." But taking for granted the colony is strong to cause so much condensation of moisture, it seems against all hygienic rules to declare it healthy to be so found, and we ourselves would say, if shut up in a small room with enough human beings to cause moisture to run down the walls even—to say nothing of its streaming out of the doorway—that it was a good bit too warm, or wanted ventilating. And this is, in my opinion, detrimental to the bees, and one cause of our finding mouldy combs, especially along the bottom edges, which the bees do not cover in winter time. One does not find mouldy combs in buildings, say under a tiled roof where bees have been located for a long time and with plenty of ventilation. The question then arises, do our bees require impervious quilts to cover them?—J. D., *Chichester, February* 13.

REPLY:—The truism that an ounce of practice is worth a pound of theory is especially applicable to bees and bee-keeping, and whatever "hygienic rules" may say to the contrary, our correspondent may safely take it from us that the statement (an editorial one) that "moisture seen issuing from a hive-entrance in the early hours of a spring morning" is a very welcome sight for a bee-man, who scarcely needs to listen to the low, contented "buzz" of the bees, which always accompanies it in order to be sure that the colony within is strong and prospering. To any reader who doubts this we simply say look out for such stocks at such a time and without bothering about "the why and wherefore." Get supers ready for such hives, as sure to be among the best and most forward.

HONEY AS BEE FOOD.

HOW MUCH BOILING WILL MAKE HONEY FROM DISEASED HIVES SAFE AS BEE-FOOD?

BY DR. C. C. MILLER.

Your footnote anent the matter of destroying foul-brood spores by boiling, Mr. Editor, page 790, deserves very careful attention in the way of reply. It would be a serious matter if a number of colonies should be diseased because foul-broody honey had been fed to them after being heated insufficiently. Critic Taylor thinks fifteen minutes' boiling is sufficient to make such honey safe, and you found foul-broody honey safe after being kept ten or fifteen minutes at 180 deg. We must be a little careful about making negative testimony go too far. Suppose that you and friend Taylor found no evil results from feeding infected honey that had been boiled fifteen minutes. Suppose further that twenty others corroborated your testimony. Then suppose that five other men found the disease given by such honey after such boiling. Would you advise me to go by the testimony of the twenty-two or the five? Of the five I feel pretty sure, for the chances would be five to twenty-two that I should lose by feeding such honey.

You think it would be interesting to know whether M. Genonceaux found spores still alive after two hours and a quarter of boiling. I don't know what experiments he made, or whether any; but I think I can refer you to

testimony from a trustworthy source as to experiments that will pretty well settle that it is not always safe to feed infected honey that has been boiled only fifteen minutes.

In Dr. Wm. R. Howard's excellent little treatise on foul-brood, on page 20 he gives Proposition VI., "That the vitality of the spores of *Bacillus alvei* is not always destroyed when exposed to a temperature approaching 212 deg. (boiling-point) for forty-five minutes." He put spores into tubes of liquid gelatine, and thrust the tubes into boiling water. The contents of the tubes would approach but not quite reach the boiling-point. Then he made trial cultures on potato. From the tube that had been in the boiling water fifteen minutes he got growth in four out of five. In the tube that had been plunged thirty minutes he got growth in one out of five; after forty-five minutes, one out of five. After fifty minutes, none.

With that testimony it would hardly be safe to advise less than fifty minutes' boiling.

Later, experiments were made on a more extensive scale by J. J. Mackenzie, Bacteriologist of the Provincial Board of Health, Ontario, Canada, the result of these experiments being quoted by Dr. Howard, page 42, as the work of "an exceedingly careful observer." Prof. Mackenzie saturated sterilized silk threads with a beef-tea culture of *Bacillus alvei* in which there was a large number of spores. The threads were dried, then heated in wax. Heated to 212 deg., there was growth in the different trials up to two hours' heating. No growth was secured from spores that had been kept at 212 deg. for two and a half hours. Kept at 198 deg. for two hours there was growth, but none after three hours.

While not inclined to dispute in the least that you may have safely fed infected honey that had less than fifteen minutes' boiling, with my present light I don't feel safe to advise anything less than boiling two and a half hours.

A point of interest is that experiments made by Prof. Mackenzie satisfied him that there was no danger of foul-brood from foundation, and also that no spores float in the air.

The spores will live for years. No amount of freezing seems to hurt them, but exposure to common air for twenty-four or thirty-six hours will destroy their vitality.—*Gleanings* (American).

DERBYSHIRE B.K.A.

ANNUAL MEETING.

The annual general meeting of the above Association was held on February 10, at the Y.M.C.A. Rooms, Derby, Ald. J. L. P. Barber, J.P., in the chair. There were also present—Messrs. R. Giles (vice-chairman), J. Stone, T. Richards, H. E. Currey, R. H. Coltman, J. Rowland, W. Burgin, G. Hunt, J. Durose, G. H. Varty, W. Handley (expert), and others. The Duke of Devonshire, K.G., was unanimously re-elected as president of this association. Ald. J. L. P. Barber, J.P., was also re-elected as chairman; Mr. R. Giles, Etwall, vice-chairman; Dr. Copestake, treasurer, and Mr. F. Walker, hon. secretary. Mr. F. Walker desired to resign his duties as secretary, but eventually consented to continue in office for another year. In responding to a cordial vote of thanks for his services as chairman during the past year, Ald. J. L. P. Barber stated that he would present a challenge cup, value £5, or any other article the committee considered desirable, to be competed for by members, in order to encourage bee-keeping in the county. The Committee of Management, district secretaries, and experts were also re-appointed. The committee consider it desirable that during the ensuing season an additional expert should be employed in visiting bee-keepers in the county, either for practical expert work or foul-brood cases. Mr. Wm. Handley, Hasland, Chesterfield, will take the north, and Mr. G. H. Varty, of Etwall, the southern part of Derbyshire. Educational lectures and practical demonstrations on bee-keeping will also be arranged in the most suitable centres of the county as early as possible in the spring.

[Above report arrived too late for insertion in usual position, hence its appearance here.—Eds.]

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

A. H. (North Bucks).—We cannot see that the slightest good can possibly follow the printing of our correspondent's positive assurance that certain things—which practical experience in the hands of skilled bee-keepers has proved to be right—are, and must be, wrong! We are, therefore, perfectly content that "A. H." should continue to believe that using "glass quilt," "celluloid," "American cloth," &c., and painting the insides of hives, "will generate and propagate disease" among bees, but, seeing that the contrary has been abundantly proved, we must be pardoned for not refusing to believe our own eyes or the evidence of correspondents who are, to say the least, as reliable as "A. H." himself.

R. S. M. (Congresbury).—*Single Stocks in "Wells" Hives.*—1. The purchase of additional stocks or swarms in spring is the only method we can suggest of filling up the vacant portion of the hives. 2. The management of ten or twelve stocks is too large a question for reply column; the best course is to procure a copy of "Guide Book" (price 1s. 8d. from this office) and study it.

*** *Several Queries, &c., will be answered next week.*

Editorial, Notices, &c.

DEVON BEE-KEEPERS' ASSOCIATION.

ANNUAL MEETING.

The annual meeting of the Devon Bee-keepers' Association took place at the Guildhall Exeter, on the 27th ult, Colonel Walker, the President, in the chair, and among others present were Colonel E. Woodcock, Miss Farrant, Mr. and Mrs. Woosnam, Messrs. H. Lathrope, J. Hookway, H. Wide, E. Wide, J. Trebble, F. O. Smith, T. H. Burgess, G. H. Barton, F. E. Williams, W. C. Milton, W. H. B. Catford, A. W. Barker, A. Godsland, W. H. Oliver, C. Woodland, and H. Tolson (hon. secretary). Letters regretting non-attendance were received from the Rev. W. T. Adey, Mr. C. Marks, and Mr. Morgan.

The first annual report and balance-sheet stated that the year's efforts had not been fruitless, and if the Association had not quite reached the size that some of its more sanguine members expected, it had been able to do good work, and the future promised benefits not only to bee-keepers, but to the general well-being of the community. The work of the past year had enabled the Council, in some measure, to realise the size of the bee-industry in Devonshire. If they were any doubts that Devon was an ideal place for bee-keepers they had been dispelled. Despite the bad season, large quantities of the very finest honey had been harvested, and, what was almost as important, there was very little honey of decent quality left on the hands of the members. The Devon County Council had also expressed their sense of the value of the society by recognising its experts, and the Council hoped that ere long the Devon County Council would give still more valuable encouragement.

After some remarks by the Chairman, the report and balance-sheet were adopted.

Lieutenant-Colonel H. J. O. Walker was re-elected President, as were also Mr. M. Farrant, junr., and Mr. H. Tolson as Hon. Treasurer and Hon. Secretary respectively. The Executive Council were elected as follows :—The Revs. W. T. Adey and F. W. Toms, Miss S. Hole, and Messrs. T. H. Burgess, W. H. B. Catford, A. Godsland, S. Head, J. W. Jacomb-Hood, W. B. Jones, F. H. Kough, W. H. Oliver, E. E. Schofield, J. Trebble, F. E. Williams, and E. Wide. The name of the Rev. Dr. Danger was also added to the list, the Chairman eulogising his work in connection with the old Devon and Exeter Association.

This concluded the business of the meeting.

A lecture was then given by Mr. J. W. Jacomb-Hood on "Bee-keeping, with Special Reference to Foul Brood," illustrated by photographic views, shown by the help of a powerful lime-light lantern. At the close the lecturer gave interesting and lucid replies to questions put to him by persons among the audience.—*Communicated.*

WILTS BORDER CO-OPERATIVE B.K.A.

ANNUAL MEETING.

The annual meeting of the above Association was held at the Neston Club on Monday February 13, and was presided over by Mr. J. W. Spencer. The statement of accounts and report were presented and unanimously adopted. From these we learn that the receipts from members' subscriptions and goods sold amounted to £23 16s. 3d., and the expenditure consisted of bee goods bought, prizes at the Neston Flower Show for honey, &c., and sundry expenses which amounted to £18 19s. Out of the balance a bonus of 20 per cent., amounting to £3 7s. 9d., was ordered to be paid to members on the amount of their purchases during the year, leaving a cash balance in the hands of the treasurer of £1 9s. 6d. and stock in hand value £4 16s. 3½d. Lord Edmond Fitzmaurice, M.P., was re-elected president, and Sir J. Dickson Poynder, M.P., Messrs. G. P. Fuller, Herbert Pictor, C. E. Hobhouse, E. S. Maskelyne, and W. A. Yockney, were re-elected vice-presidents (Lieut.-General Lord Methuen has since consented to join the list of vice-presidents). Mr. J. W. Spencer was re-elected hon. secretary and treasurer, and a committee appointed consisting of Messrs. T. Owen, C. Eyles, H. Frankham, W. J. Welsh, F. Lodge, J. Barnett, F. Sheppard, H. Cooke, E. Davis, F. Baines, M. Knapp, and C. Cawt. Mr. H. Frankham was re-elected storekeeper. The members (who are nearly all working men) agreed that the Association was of great benefit to all cottage bee-keepers. The membership has increased in numbers, which, with promises for the new year from non-attached bee-keepers, proves that the society is appreciated. Two members have obtained the third-class expert's certificates of the B.B.K.A. during the year. Several recommendations were made with regard to the schedule of the bee and honey show held in connection with the Atworth and District Horticultural Society's Show, and the hon. secretary was directed to get foundation, sections, and other bee goods ready for members against the coming season.—(*Communicated.*)

ESSEX BEE-KEEPERS' ASSOCIATION.

ANNUAL MEETING.

The annual general meeting of the above Association was held in London on Thursday, February 16. The report for 1898, which was read and adopted, referred to the past year's comparative failure, so far as honey production in the county, except in very favoured localities, and stated that '98 will probably establish a record season for the large percentage of honey-dew gathered by bees throughout the kingdom. Owing to adverse circumstances the usual honey show was not held last year, but the committee are pleased to state that it has been arranged to hold an exhibition of honey and bee-appliances, &c., in connection with the

County Show of the Essex Agricultural Society at Epping on June 9 and 10, 1899.

On July 28 last an examination of candidates for the third-class certificate of the B.B.K.A. was held in the apiary of the Hon. Sec. at Chingford, Mr. W. Broughton Carr being the appointed examiner. Four candidates presented themselves two of whom were successful in obtaining a "pass."

Fifty-five new names have been added to the Association list, the total membership now numbering 261. Fresh arrangements have been made with regard to the expert work for 1899, Mr. W. A. Withycombe having been engaged to carry out the same and commence the spring visits to members in April next.

The Countess of Warwick again accepted the office of President for 1899, as did the whole of the retiring Vice-Presidents. The executive committee for the new year consisting of the following gentlemen:—Messrs. G. R. Alder, L. Belsham, A. J. Cross, E. Durrant, F. G. Kimber, G. F. O'Fflahertie, O. Puck, and Dr. Symmons. Hon. Treasurer —W. M. Tufnell, Esq., J.P. Hon. Secretary —W. J. Sheppard, Chingford. Expert—W. A. Withycombe.—(*Communicated.*)

PARTHENOGENESIS

VERSUS THE NEW "DICKEL" THEORY.

By R. Hamlyn-Harris, F.E.S., Member International Entomological Society of Guben, &c.

Basis of the theory :—

> He either fears his fate too much,
> Or his deserts are small,
> That dares not put it to the touch
> To gain or lose it all.

When I delivered my address at Bristol on the 28th ult., on the question of "Parthenogenesis *versus* Dickel's Theory," I did not intend to convey to my hearers that there were not other matters of equal importance in connection therewith, nor could I in the time allotted do more than give a brief summary of the chief points of the new theory as they struck me; other points being only, to my mind, matters of detail and *conjecture*, following in due course, as a natural consequence.

Mr. Dickel, in his book, published last year and entitled, "Das Prinzip der Geschlechtsbilding bei Tierengeschlechtlisher Fortplauzung," sums up his theory in nine paragraphs—but these contain an unprecedented amount of repetition—as does the remainder of his work—which, however, he may consider necessary to put due force into his articles.

Having opened up the subject to some extent, I must necessarily presume a certain amount of knowledge on the part of my readers. Nor will I do more here than mention the basis of the theory, but I must allude to what seems to me a very curious and significant fact. In my address I made use of the words, "rearing a huge inverted pyramid on a very small apex." Now this is—to some extent, at least—distinctly confirmed in Mr. Dickel's own writing. He tells us plainly—though in high-flown language—that he formulated his theory—suggested by certain ideas and considerations—and, having laid the foundation, he proceeds to rear his building upon it!

This further justified the use of another remark made by myself on the same occasion, that he (Mr. Dickel) "took for granted that which he sought to prove." Having satisfied himself that the truth of his theory could only be controverted (as indeed it is) by the objection that there could only exist a second mode of reproduction—viz., the so-called Parthenogenesis—he proceeds to say that the objection has only an *apparent* foundation, as females are not produced parthenogenically in the case of the honey bee.

Now it is a well-known fact in entomology that parthenogenesis—meaning, as Mr. Cowan ably puts it, "reproduction without fecundation"—does not *merely* apply as in the case in point, viz., drones, produced from unmated queen bees—but there are many insects in this beautiful world, so full of wonders, which produce females parthenogenically, as, for instance, the phasmidæ and others. It is also a subject of great interest (and, to my mind, bears upon the point) that in the case of many fish, fertilisation of the eggs does *not* take place at all until after the same have been laid! The theory put forward seems to be based upon the assertion that "the three kinds of honeybee in a hive fall into two groups according to their several functions — one fundamental represented by the queen bee and drone and one *determinative* represented by the workers."

And from this Mr. Dickel draws his own conclusions—considering, no doubt, that

> He who thinks in strife
> To earn a deathless fame must do, nor ever
> Care for life.

"Under normal conditions the three different shapes and sizes of the cells serve to promote the activity of the glands in their effects on the nerve system by means of the hairs on the bee's body. Further, the cells are impregnated with a scented material, which is incorporated in them during the comb-building by means of this sex-producing secretion." I have here given a somewhat literal translation from Mr. Dickel's book, previously referred to, in order to point out another very imaginative "*aim*," and one which carries absolutely no weight unless confirmed by the most rigid proofs. These I fail to find, seeing that logic based upon *supposition* is certainly far removed from *proof positive.*

That the size and shape of the cell affect the resultant insect is, to my mind, most feasible, as Mr. Dickel states, though it would be more correct to say that the cell is fitted by nature, through the instrumentality of the bee, to the requirements of its inhabitant; but that there is a close connection between the shape and size of the cells and the sex-developing power of the worker bee requires a considerable

amount of something more than thought to understand, especially as he goes on to state that, "it could only be through the various pressure on the hairs of the bee's body." Whether this is so or not I cannot say, but it would be difficult to assert as a positive fact either way, because that many of the hairs are organs of touch, and extreme sensibility has never been denied.

Mr. Dickel declares that he and many of his friends have successfully (?) reared workers, and even a couple of queens, from so-called drone eggs; and takes as conclusive evidence of this that "normal drones, as well as other bee-forms," have their origin in fertile eggs; it therefore appeared unnecessary to him to test the reverse by transferring worker eggs to drone cells.

With bees especially man has introduced many artificial means and ways of forestalling or of trying to improve upon the ordinary course of nature; but not yet, at all events, has any change or alteration been made in the wonderful provision God has vouchsafed for the reproduction of species, for throughout it all we find man's imaginations and conjectures in no way whatever equal to the laws or resources of nature.

Has not God created the insect and endowed it with wonderful powers? But if the workings of an imaginative mind, bent on fame, seeks to controvert what nature so plainly teaches, and we are driven still more closely to observe and contemplate the wonderful acts of an all-wise Creator; and with these observations to detect that which the fertile mind of man seeks to introduce, are we not justified, in our small way, in seeking to maintain the balance of universal love which has preserved to us the insect world, unconquered, unvanquished, perfect in harmony? On the other hand, the imagination of man if extended to Nature in its beautiful and surpassed majesty, tends to spoil and mar the delight which we are meant and given to enjoy?

HIVE BEES IN AUSTRALIA.

WHO FIRST INTRODUCED THEM.

A correspondent sends us a cutting from the *Melbourne Leader* of December 24 last, which may be useful to our readers for future reference as evidence regarding the acclimatisation of the hive bee in Australia. The cutting reads as follows:—

"Considerable doubt exists as to the first introduction of bees to Australia. It was once the popular impression that Dr. Wilson first brought them to Tasmania in 1831, and thence to Sydney, and that the original hives were imported into that colony from England. But recent research has made clear the fact that bees were acclimatised in New South Wales long before that time. In the issue of the *Sydney Gazette* of June 21, 1822, a hive of bees is advertised for sale by Mr. Parr, the importer being Captain Wallace, of the ship *Isabella*. On November 1 of the same year a paragraph appeared in the *Sydney Gazette* congratulating its readers 'upon the complete establishment of that most valuable insect, the bee, in this country. During the last three weeks three swarms of bees have been produced from two hives, the property of Mr. D. Wentworth, purchased by him from Captain Wallace, of the *Isabella*, at his estate, Homebush, near Parramatta.' The hives were probably the same as those advertised for sale in June. Then, again, bees were brought from England to Sydney in 1824 in the ship *Phœnix*, under the charge of Dr. Quede, surgeon-superintendent. It was understood on board that they were sent by the home government. Finally, Dr. Thomas Braidwood Wilson, R.N., brought bees to Tasmania in 1831, and for his services was presented with a silver snuff-box. It is a strange thing that in his numerous voyages to the colonies from 1821 to 1836 he was not aware that bees were acclimatised in New South Wales, and that he should have taken the trouble to import them from England instead of Sydney. The most probable solution seems to be that the New South Wales stock died out periodically. The fact that bees died in vast numbers years ago gives weight to this argument. Each statement of the different importations is accompanied by the assertion that the bees referred to were the first introduced, and this, too, seems to point to the fact that the previous stock had died out, owing, presumably, to the vicissitudes of the climate."

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to "The EDITORS of the 'British Bee Journal,' 17, *King William-street, Strand, London, W.C.*" *All business communications relating to Advertisements, &c., must be addressed to* "THE MANAGER, 'British Bee Journal' *Office*, 17, *King William-street, Strand, London, W.C.*"

*** *In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

THE SOLAR WAX EXTRACTOR.

[3598.] As requested I send you a pen and ink sketch of my extractor, which I hope my brother bee-keepers in the sunny south, as well as our cousins over the border, will study and copy. I am a constant reader of the B.B.J. and a widower for several past years, but will not buckle tae with a scate simple or a spae wife seeking a Bannet laird for a gudeman.

I have experienced all this, but as "another oppressed bee-keeper" (3569, p. 37) relates how he has to sit in a chair (I presume without his slippers, poor fellow!) which our genial friend C. H. Young (3509, p. 502), has been provided with on entering his sitting room by his "young queen," I am seriously concerned with the statement I made in B.J. of December 29 last (3522, p. 513), certainly not to the fair widow, but simply in considering Mr. Young's "sixthly" (and an incident which occurred at a friend's house on New Year's eve). His "Less Rosemary" is convincing. I will adopt it too, if advisable.

Now, Messrs. Editors, I will enter into particulars. In the B.B.J., September 24, 1896 (p. 387), there appeared an article by Mr. G. M. Doolittle, describing "How to make a Solar Wax Extractor." The various pieces of wood,

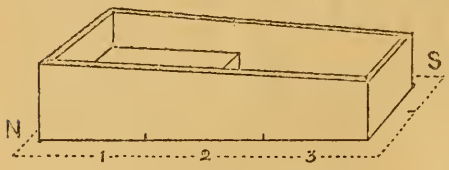


Fig. 1.—Body of Extractor.

&c., which go to make up the extractor are enumerated on page 387, and measurements given in separate columns. I studied these figures carefully, and with a slight alteration completed the extractor I now use. No. 1, which forms the side of extractor, I make 36 in. long and 10 in. deep at its widest part, sloping down in front to 6 in., similar to a cucumber frame as seen in fig. 1. Mr. Doolittle's No. 12 I find is not so handy, consequently I have adapted a zinc melting pan (fig. 2). This is

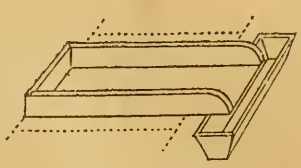


Fig 2.—Melting Pan.

2 in. deep on three sides, with a wire stiffener running round to the rounded corners in front, as shown; it is 10 in. wide and 14 in. long. When using it must be placed on the wooden "bed" seen inside the extractor. This "bed" raises the melting pan 5 in. nearer the glass lid, and slopes with the sides, bradded back and front together; but it is not a fixture. Having placed the "bed" and "pan" and adjusted the extractor due south at 12 o'clock I fill up the pan with comb which will run quite clear into the zinc or tin dish, 11 in. long and 5 in. wide at top, similar to a cake-tin. I do not prop up my extractor at the back, as the heat rose to 140° Fahr. and use no wire cloth. Place any loose pieces of comb at the small end of the extractor to soften for filling up the pan as needed, remove the debris while still warm. If the heat is exhausted, put on the cover, until Sol reappears, and follow instructions in the B.B.J.

The box (fig. 1) need not necessarily be 3 ft. long; 2 ft. might be sufficient, but I am

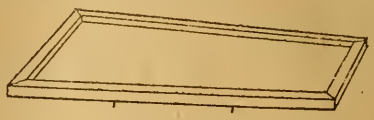


Fig. 3.—Glass Lid.

narrating my own experience and might make some alterations in the future. The body-box should be air-tight. A heavy glass slide is necessary.—AULD REEKIE.

FAULTY HONEY JARS.

[3599.] With the permission of our editor I venture to suggest a discussion (while the quiet season is with us) upon the difficulty of getting good and reliable screw metal-topped honey jars at the present time. One correspondent informs me that he purchased screw-capped jars from four different firms last season, and all were alike bad. The tops fitting badly, as a rule, and were made of so soft a metal that those that did fit were not reliable. I bought a gross of honey-jars last season that looked all right as far as appearance went, but on using them I found not one of the tops fitted really well. The seller offer to take them back; but my health being bad at the time and my bees requiring more attention than I could give them, I was unable to re-pack and return the jars within a reasonable time, so had to keep them and sell most of the jars as tie-overs at a half-penny each. This lost me quite 10s. on that single gross of jars. No doubt bee-keepers even in far more comfortable circumstances than myself would consider this a serious loss, to say nothing of the annoyance. I frequently see advertisements headed "Buy your goods direct from the maker," but in this case I bought my jars of the maker.

This trouble has been gradually growing during the last eight or ten years, but on the other hand, as showing how jars have gone down in quality, I have a few jars now that I bought nine or ten years ago, and although they have been in use all this time, the metal screw-caps are nearly as good now as when quite new, from being made of good hard metal. Jars with caps like these are now rare, so much so, that if a museum of really good bee-appliances existed, I should certainly give one of these jars a place in it to show the contrast between it and the jars of to-day. "Marketable appearance," which includes a reliable jar, is considered a strong point by those best qualified as judges, and rightly so,

I think; but bee-keepers are entirely at the mercy of the makers of jars. I can quite understand a judge passing over without notice an exhibit of messy-looking, leaky jars; and with this in my mind I have myself helped to wash jars that have arrived at an exhibition with the honey running down the outside. I have also heard of the tops giving way when the jars were being lifted by the judge, thus causing broken jars and spilled contents. Jars with unreliable tops are so troublesome to grocers and their customers that a second parcel of honey in such jars is not seldom refused. John Bull (whether circumstances have placed him high or low) is willing to pay a fair price for what he needs, and naturally expects a reliable article. Prices of jars have not gone down in proportion to the quality, but we must have jars that can be relied upon, even if required to pay a trifle more for them. When I first took the bee-fever it was usual to exhibit honey in pots and jars that could be had at any house for the asking, the honey, too, was worth double its present value. What change time works! But equality in size of jars and neat appearance are essential to success in the disposal of apiarian produce.—WM. LOVEDAY, *Hatfield Heath, Harlow, Essex, February* 16.

"YOU KEEP BEES"—AND THE "REST."

[3600.] "Knowledge and ability in several directions," admitted friend John Kibble, and your letter (parody included) on page 67 of last week much enjoyed. One item, however, was wanting, in order to place your remarks "on" a sound footing, and that little want has—to quote yourself—carried you "a bit off" the line of fair argument. In other words, there exists a necessity in a case of even kindly criticisms, for quoting both text and context. My words were, "What with *bee-veils* to protect the face from all possibility of a chance sting, the '*smoker*' for completely subduing the bees, and the *teaching* given by the various county bee-keeping associations, the avocation has become *almost* a 'kodakial' one, with the motto of," &c. This surely conveys a very different meaning to that expressed in your letter, does it not? But to go further regarding the "teaching" given by associations, just bear in mind what is done for the embryo bee-keeper. Why, in our Kent and Sussex Association the expert visits members twice during the year, and if desired will put the supers *on* in the spring, and take them *off* in the autumn. We do not guarantee that they (the experts) shall eat the honey gathered by our members' bees, but as a more useful act of relief work for them, we labour hard to find a market for their surplus honey, and in this way usually get rid of a good portion of members' honey. These things have evidently been overlooked by "J. K.," but they bring the matter well within the scope and limit of observations.

That motto on our friend's mother's plate is a good one, but may I gently remind him of the danger of becoming — perhaps unconsciously—unjust, unless the critic takes care to "verify his quotations."—HENRY W. BRICE, *Upper Norwood, February* 18.

THE PARIS EXHIBITION.

[3601.] May I, through the columns of the B.B.J., be allowed to draw the attention of English bee-keepers to the Paris Exhibition of 1900, and to ask if we are to be represented there in any way? Why not?—R. HAMLYN-HARRIS, *Villa Röminger, Tubingen, Würtemburg, Germany, February* 15.

SUMMER MANAGEMENT OF BEES.

BY W. Z. HUTCHINSON,

ED. *Bee-keepers' Review.*

(Read at Ontario B.K.A. Annual Meeting, December 6, 1898.)

My experience in the apiary has been mostly in the line of comb-honey production, and it is from that standpoint that I will write. I prefer to have the bees make a start in the supers before swarming. If swarming is thus delayed, larger swarms are the result; and as I get nearly all of my surplus from the swarms instead of from the old colonies that have swarmed, I get better results if the great mass of workers can thus be kept together where the sections are. For this reason I use every possible means to induce the bees to turn their energies early toward the supers. For this purpose I know of nothing better than the use of drawn comb in some of the sections, the more of them the better. I should be glad to give each colony a super of drawn comb in the spring. Where the harvest opens with a rush, and the bees are at once forced into the sections before there is time to make preparations for swarming, the drawn combs may not be of so much importance; but where the flow comes on gradually, and the bees are Italians, with their reluctance to store honey at a distance from the brood-nest, drawn combs are nearly as valuable as combs of honey. When the flow is light, the bees will begin storing honey in drawn combs long before they draw out foundation for this purpose. When the bees begin storing their surplus, then they are inclined to continue storing it. This early storing of honey in the supers relieves the pressure upon the brood-nest, and thus allows of the raising of more brood, and, at the same time, retards swarming.

As soon as the sections in the first super are one-half or two-thirds empty, and the flow of honey remains good, I raise the super and put under another super, having sections furnished with full sheets of light foundation. Getting

the bees started in the sections early in the season, giving them plenty of surplus room, and shading them so that the heat will not drive them out, will usually keep bees from swarming until they can swarm to advantage. Under this management I have known one-half of the colonies not to swarm at all. But, in the majority of cases, it eventually comes.

The management of swarms in a large apiary is really one important matter. I have tried leaving queens unclipped and allowing them to go with the swarms, until I am heartily sick of it. The climbing of trees, the chasing of running swarms, the straightening out of "mix ups" that result from the simultaneous issuing of several swarms, would, it seems to me, drive any man to control his bees by controlling their queens. I will admit that "mix ups" will often result when we have control of the queens; but, so long as we have our thumb on the queens, we are master of the situation. I have tried both the clipping of queens and the using of queen-traps, and my preference is for the latter. It saves the time and trouble of hunting up and clipping the queen, the time and trouble of hunting for and caging her when the swarm issues, and there is no danger of her being lost by the swarm coming out when no one is present to care for it. Many of the "mix ups" that occur in a large apiary may be avoided by the use of swarm-catchers. A swarm-catcher is simply a light framework covered with cloth. The frame is about 3 ft. in length, 18 in. square at the outer ends, and tapering to 3 in. by 10 in. at the other end. The outer, or large end, is covered with a movable door of wire cloth. The smaller end nicely fits over the entrance of a hive. As soon as a swarm is seen issuing, the small end of the catcher is clapped over the entrance, and when the swarm has been caught, the catcher is removed, a flap of cloth buttoned over the entrance, when the catcher and its contents may be set aside in the shade, and the bees hived at leisure. By having three or four catchers scattered about in different parts of the yard, nearly all of the swarms can be caught if desired.

My practice is to hive the swarm upon the old stand, in a contracted brood-nest, with starters only in the brood frames, and to transfer the supers from the old hive to the swarm. By this plan, the bees are back in the supers at work again within twenty minutes after they left them. As there are no combs in the brood-nest in which to store honey, and the brood-nest is of the capacity of only 5 L frames, the honey must, of necessity, go into the sections. I use a queen excluder, otherwise the queen, too, would go into the supers. The bees at once begin to build comb in the brood-nest, and, as fast as it is built, the queen lays in it. The result is that the honey goes into the sections, and the brood-nest becomes a brood-nest indeed. I prefer starters in the brood-nest to foundation, and drawn combs I have found to be of no advantage—in fact, a disadvantage. Drawn combs the bees quickly fill with honey, and are then very loth to begin work in the sections. When they begin storing their honey, they are inclined to keep on storing it. With foundation in the brood frames, the foundation must first be drawn before it can be used, and this gives the bees time to begin storing in the sections. The greatest objection to the plan of having the bees build their own comb in the brood-nest is that, if the queen is old, too much drone comb may be the result; but, as this plan usually results in rather light colonies, unless there is a full flow in which they can build up, and it is desirable to unite them at the close of the harvest, there is an opportunity of discarding the drone comb.

I go back just a little. At the time of hiving, the old colony is set to one side of the newly-hived swarm. The entrance of the old hive is turned to one side. In a day or two the entrance of the old hive is turned towards the new hive. In a day or two more it is again turned still more. By the eighth day the two hives will be standing side by side. Take away one, and all the field bees of both hives would return and enter the hive left upon the old stand; so, in the early part of the eighth day, or the afternoon of the seventh day, the old hive is carried to a new stand. The result is that the hive having the sections receives a nice little addition to its working force, while the old colony loses this force just at the time when the young queens are ready to hatch, and is so weakened in numbers that further swarming is abandoned. The only condition under which this plan fails in preventing after swarming is when the heat or the swarming mania drives out a swarm before queen cells are complete. In this case it is so long after the old colony is given a new location, before the queens are ready to hatch, thus sufficient bees hatch out to make a swarm. Unless a colony swarms early, or the flow continues late, I expect no surplus from a colony after it has swarmed, but it is always found in fine condition to winter. It will have a young queen, an abundance of excellent stores, and plenty of bees that have not worn themselves out with hard work.

Some of my methods may not be desirable in all localities; but, in my locality, they are the best I have tried.—*Canadian Bee Journal.*

TREATMENT OF WASP STINGS.

Many persons who suffer severely from wasp stings at this season of the year will be glad to know of an effectual remedy. Rubbing a little washing soda, or, still better, ammonia, into the wound, as is done in cases of adder bites, affords only a partial relief, but Sir J. F. D. Donnelly, writing in last week's *Nature*, suggests a remedy which appears to be even more efficacious. Having by him some cocaine tabloids (one-sixth of a grain),

such as are employed for hypodermic injection, he used one in the case of a lady on whom wasp stings produced large and painful swellings followed by illness for some days. A single tabloid dissolved in a few drops of water, and applied with the finger to the part stung, at once relieved the pain, and a second application an hour or two after, he stated, completed the cure. Sir J. F. D. Donnelly has since kept a solution of cocaine ready for use, and he has found it effective in all cases. It should, of course, be applied as soon after the sting as possible; but he has found it give great relief even seven or eight hours afterwards. It is well known that wasp stings occasionally produce death. A case was recorded a few days since where a man picked up a fallen gooseberry and placed it in his mouth. This contained a wasp that stung him in the throat, produced swelling that soon caused suffocation. Similar accidents arising from eating fallen plums and other fruits have been not unfrequently recorded. There is no doubt that the hypodermic injection of cocaine into the back of the throat—or possibly the application of the tabloid to the sting—might be effectual in preserving life in these cases. It is quite possible that the application of cocaine might be found advantageous in the case of adder bites. Under any circumstances the remedy would be worth a trial.—*Field.*

[The above, which appears in the *Field* of September 17 last, has been sent on to us by a B J. reader who considers that it may be useful to bee-keepers. Nor do we doubt that Sir J. F. Donnelly's remedy will be efficacious in cases where bee stings are more than ordinarily troublesome.—Eds.]

Queries and Replies.

[2157.] *A Beginner's Bee-Troubles.*—As a beginner in bee-keeping will you allow me to describe my experiences, and ask for a word of advice through your paper? I had a bad accident with my one hive during this winter. The roof blew off in one night during a gale, and remained off for some hours before being noticed. It was raining heavily, and the many thicknesses of quilting became completely saturated. Dry ones were put on without delay, but we cannot tell the amount of damage done to the bees. To-day (February 18), I took my first look at the bees for the present year. When packed up for the winter they were a fairly strong colony, covering about eight frames, each containing a good bit of honey, we also gave them a little syrup. To-day I find considerably less bees, but still a large quantity of honey, indeed I cannot imagine what they have lived on through the winter, for the stores seem almost as plentiful as when we packed them up last autumn. There was a small patch of sealed brood on each side of two frames. 1. May I consider this a good beginning for the coming season? I was glad to see it, as I feared the queen might be dead after the trying experience described. One side of the hive seems a little damp, and there is a touch of mould about some of the combs, but too little to be of any consequence, I should say. I do not, however, exactly know how to deal with this condition of things. 2. Would it do any damage on warm days to take off the roof and let the sun and air dry the coverings? Of course, I mean with some quilting left on. I have about twelve thicknesses of carpet and felt on the top of the frames. 3. Is this sufficient or too much? 4. When will it be right to put in more frames of foundation? 5. Why are there often a great many half-filled, unsealed cells of honey in the comb? Will the bees use such honey, or will they wait for the honey season and fill up the cells and seal them?—C. E. C., *Handsworth, Birmingham, February* 18.

Reply.—1. Fairly good, but it is quite common to find brood on several combs in mid-February, if bees are at all numerous. 2. It is a very good plan to allow the warm sun to dry up all dampness about hive covering at this season. 3. So many as twelve thicknesses is altogether unnecessary; half that number being almost too many. 4. As soon as the bees cover all but the outside combs; but one frame so fitted may be safely inserted in centre of brood-nest, when there are four or five good seams of bees. 5. Unsealed cells are usually the result of giving the bees syrup-food too late in the season to allow of its being sealed over. Bees usually consume all unsealed food before breaking the cappings of that sealed over.

[2158.] *Size of Frames for Working Sections.*—I am about starting bees, having long possessed a good hive, which I have lately thoroughly examined in the light of all the bee literature that seem to be necessary, and one thing in the construction of this hive of mine causes me to ask:—1. Why the standard frame was chosen so that it will not take six sections of $4\frac{1}{4}$ in. square, when had it been $9\frac{1}{8}$ in. deep instead of $8\frac{1}{2}$ in. by making the sides of the 2 in. frame a little thicker than ordinary it would hold six sections perfectly? I see the advantage of at times inserting sections in the body of hive mentioned in Mr. Cowan's "Guide Book," of 1881 date, and I notice he does not mention this in the last edition, which I have just obtained. 2. Is the idea obsolete? 3. Are any sections made to just fit standard frames? 4. Had I better have some six or eight hives made the same size as my present one? 5. Does the question of size of comb for separator influence the matter.—E. R. H., *Criccieth, N. Wales, February* 20.

Reply.—1. First let us say that the Standard Frame was the outcome of long delibera-

tion and much thought on the part of a special committee chosen from the foremost practical bee-keepers of the day, and its suitability for success in bee-keeping in this country is obvious and undoubted. For the rest, and in reply to our correspondent's query No. 1, a frame with sides 2 in. wide is only of use in a surplus-chamber, and would need to be $9\frac{5}{8}$ in., not $9\frac{1}{8}$ in., deep to take two rows of sections inside its rectangle. 2. Yes. Sections are very rarely worked in hive bodies nowadays except where the "combination" principle is adopted. 3. No. Practically the only section in use is the $4\frac{1}{4} \times 4\frac{1}{4}$ in. or 1-lb. one. 4. Any departure from the Standard frame is, in our opinion, most unwise, for reasons so well known to practical bee-keepers that we need not enumerate them. Our advice, therefore, is, have all hives made to take the "Standard frame." 5. No.

[2159.] *Bees Short of Stores.*—I have a hive which, I fear, is short of stores. I also have some of last year's honey in sections. Please inform me in the B.B.J. which is the best way to give these as food for the bees. Would it do to put a few in the middle of a section rack, above the brood?—A. E. F., *Woodbridge, February* 20.

Reply.—If the honey in sections is still liquid, it will answer well to uncap a few of the sections and give them to the bees as proposed. Some steps should, however, be taken to cover the section rack up warmly, so as not to lower the temperature of brood-nest more than can be helped. The food should also be given on a warm night, if possible.

[2160.] *Transferring Bees and Combs to Frame-hive.—Pedigree Bees.*—A few weeks ago I received a stock of bees in a box-hive with fixed bars, and as I wish to have them transferred to a hive with standard frames, I ask:—1. About when should I place them on the above? 2. As only a portion of the bars are occupied with comb, would the bees work down in that state? I could give them a frame with a quantity of sealed honey and the usual full sheets of foundation. The bees have been flying on the past two days, carrying in pollen. This hive came from the North of England, and the sender informed me that the bees were of a stock, the pedigree of which he could trace back for nearly fifty years, without any change. He also said that he had never heard of foul-brood up to the present time. 3. Is not that unusual? 4. Did you receive the old book on bees which I forwarded to you in November last?—A "Constant Reader," *Holywood, County Down, Feb.* 20.

Reply.—1 and 2. When the receptacle in which they now are begins to get crowded with bees and room is needed; until this condition is reached there is little chance of the bees going below. The box may then be left on as a surplus-chamber or the bees may be driven out after all the brood has hatched; b unless you have had some experience in "driving" we hesitate in advising that course. 3. It is not *very* unusual for sellers of bees to declare that much, but they must be very ignorant of what is going on in the bee-world. None the less it is rather foolish to talk of bees being traced back with no change in pedigree when we know that queens mate with drones bred miles away from their own home. 4. We have no recollection of receiving the book in question. If you will send a line on postcard giving its title we will make further inquiry.

[2161.] *Bees Dragged Out and Killed.*—I venture to trouble you on a matter concerning which I can glean no information, either in "Guide Book" or Bee Journal for 1898. I have one hive of bees which did not swarm last year, but produced a good supply of honey. I left them with plenty of winter stores; also gave candy cake in autumn. After days of inaction, owing to wet, we had a warm day on February 8, the sun shining brightly, and, in consequence, the bees came out in good numbers. While watching them, I saw from time to time a bee emerge, dragging another, which it generally succeeded in killing. About two dozen were thus killed. I send two of them to you. It is the only hive anywhere near, and I find there is still plenty of candy left. By looking through a glass window at the side I also saw sealed honey. My bees are the native British. I may say the bees dragged out seemed strong and not easily killed.—S. W. G., *Weston-Super-Mare, February*, 1899.

Reply.—From details given we judge the bees "dragged out" are robbers. The hive-entrance should be contracted. We do not think, however, that any serious mischief will follow. Do not disturb the bees at this season, and it is quite probable that no more fighting will be seen.

[2162.] *Bees Starving.*—The 16th being a lovely day, I could not resist lifting the quilts to see how the bees are faring, and in one of my hives I was much astonished to see all the outside frames empty. I gave a cake of candy in December and another last week, as I make it a rule always to have one on each hive, however much natural food they have, and in the autumn I fed as usual for several weeks, and there was then certainly no lack of stores, so their present state is quite a mystery. But what I wish to know is: 1. Can bees live on candy till I can with safety feed with syrup, or shall I remove a frame and fill with warm syrup and return in the evening? I tried this once but failed, as the frame was not wired, and it gave way; so I would prefer not to try again unless absolutely necessary. The bees were particularly active to-day, and as I watched, several carried in pollen, and every frame (ten) seemed nearly as well covered (so far as I could see without disturbing too much) as on a summer's day; so this hardly looks as if they were suffering yet. 2. Will a queen from a 1897

cast be too old for her duties this year? She did splendidly last season. 3. Would you advise me to re-queen this spring or wait till the autumn, supposing they do not swarm? Trusting to hear in your next issue, as I am very anxious about my storeless stock.—MAUD M., *Epsom, February* 16.

REPLY.—1. Warm syrup run into the cells of an empty comb is far the best plan to adopt. Set the frame so filled close to the cluster of bees. 2. No, she is only just past her second season, and may do very well this year. 3. We should defer requeening till autumn, and then use a young prolific queen of '99. Regarding the "storeless stock" it must be kept carefully fed till natural stores are coming in.

Echoes from the Hives.

Thirsk, Yorks, February 18.—As no one seems to contribute an "Echo" in your columns from this part of Yorkshire, I am—though only a novice myself in bee-keeping—presuming to do so. The weather here has been very open, with bees moving about more or less nearly every day, which means, of course, that stores are diminishing very rapidly, and where stocks were not left with an ample supply of food the wolf has already entered and laid the inmates low; the biggest loss I know of being in an apiary of nine stocks, where four have already succumbed, with the remainder likely to follow, as the "bee-keeper," or rather I should say "keeper of bees," seems indifferent to their wants, and is apparently only too content for them, as he says, to "take their luck." I commenced last season with three stocks and finished with nine strong and healthy ones; and though they did not do much for *me* in the way of surplus from the heather, yet they did handsomely for *themselves*, the body boxes being crammed with honey, which I generously allowed them to keep, as I am already convinced there is nothing so good as their own natural food to winter upon. About a week ago I turned up the corner of each quilt to see how things were looking, and, to my delight, found them all alive and well supplied with capped stores, which removed any anxiety there might have been in my mind as to their needs for the next few weeks. For some days now they have been carrying in pollen, and yesterday some of their legs were gaily decorated with yellow from the crocuses which are out in bloom in my neighbour's garden. I am hoping with the rest of your readers for a good season, and with my stocks in good condition am anxiously awaiting events.—R. T. T.

Chichester, February 18.—The past two days have been most lovely, bees flying from all my hives (thirty stocks), and disporting themselves in the sun on alighting-boards. Crocus and lauristinus in bloom are visited by the bees Shall soon take a peep to see how bees are situated for food, also place the water-trough out. Why not put water over the frames, as in feeding? I wonder would the bees fly out for water in preference to taking it from the water-bottle?—J. DANIELS.

Norwood, S.E., February 18.—The weather, though varied is mild in the extreme, the thermometer in shade reading as high as 58 deg. on the 9th, and 63 deg. on the 10th inst. February is always an interesting month for the bee-keeper, every day bringing some new revelations of opening buds, first wild flowers and birds beginning to "nest." Soon we shall see the first butterfly, or migrant bird, to tell us how near is the spring. To-day, for the first time, our bees are busy on the crocus, and I have found, in a sheltered spot, the willow-palm in full bloom. We have this week examined three of the lightest of our stocks, and, while expecting to find them dull and sleepy, we were unprepared for the bees were not only lively, but capable of paying more close attention than was quite agreeable to us.—TWO BEE BLOSSOMS.

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING FEB. 18, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Feb. 12....	29·10	43·0	50	42	8	46·0	·15
,, 13....	29·13	49·9	52	39	13	45·5	·15
,, 14....	29·38	44·8	51	42	9	46·5	—
,, 15....	29·70	44·0	51	41	10	46·0	·21
,, 16....	29·80	37·8	50	36	14	43·0	—
,, 17....	29·95	39·0	53	35	18	44·0	—
,, 18....	30·00	38·9	49	34	15	41·5	—
Means	29·58	42·5	50·9	38·4	12 5	44·7	·51*

* Total, ·94.

Mean vapour tension, 0·232 in.; mean relative humidity, 86 per cent.; mean temp. of the dew point, 38°·5. The rainfall, viz., ·51 in., =11,537·73 gallons, or 51·51 tons to the acre, or 2·55 lb. to the square foot. For the week ending February 11, the mean temp., viz., 43°·8, was + 5°·4, and the rainfall, viz., ·94 in., +·49 in. The mean temp., January 1 to February 11, viz., 40°·1, is + 2°·9, and the rainfall, viz., 3·65 in., is + ·92 in.

May I correct a clerical error, for which I apologise, in the B.B.J., February 16, p. 68—viz., the mean minimum temperature, February 2-5, should have read 23·8 deg. (not 26 3 deg.; mean range, 13·2 deg. (not 15·5 deg.); mean temperature, 30·4 deg. (not 31·7 deg.).—FRED. COVENTRY, *Duddington, Stamford.*

DR. C. C. MILLER ON "FUEL" FOR SMOKERS.

Saltpetre Rags for Smoker Fuel.—J. W. C. Gray says: "I have had lots of trouble in getting lasting fuel for my smoker," and asks me to tell how I prepare saltpetre rags for my smoker. With pleasure, friend Gray. I think it quite likely you mean that you have trouble in getting a lasting fire instead of lasting fuel. For lasting fuel, it is doubtful whether anything easily obtained is better than sound hard wood, cut up in small pieces. The objection is the labour of preparing it. Where trees are felled, or where wood is chopped at a wood-pile, you can generally pick up chips that are all right. Such fuel will last a long time, and, after the fire is fairly started, it is not likely to go out if the smoker is all right.

If your fuel is *dry*, and your fire goes out without apparent provocation, the chances are that the holes in the bottom of your fire-box have become filled up. Clean them out. Even then it may not burn as freely as it ought, and it may be the holes are too small. Punch them larger, or get a tinner to do so.

But in case your smoker is all right and your fuel is all right, you are anxious to start a fire without the necessity of puffing your smoker a long time, watching to see whether it's going to go or go out, only to say, after you have waited what seems to be a long time, when you haven't any time to wait, "There! I do believe the old thing has gone out!" Of course, you know that, when you start out from the kitchen, if a good fire is going in the cook-stove a few live coals put into the smoker for a starter are fine. But if a gasoline-stove is running you can't have coals, and you may not want to light your smoker till you reach the apiary. In that case it is very nice to have something that will go for sure at the first touch of a match. Now I'll tell about the saltpetre.

I take a two-gallon crock (of course, larger or smaller would do), and throw into it a pound of saltpetre, then fill half full of water. Into this I put pieces of rotten-wood or cotton rags. The wood must be allowed to soak for a day or so, but the rags may be taken out at once, or they may be left a month. If you use rotten-wood for fuel, and wish to tell the saltpetre wood easily from the other, it's a good plan to throw a little red aniline dye into the crock. An old milk-pan with holes in the bottom, or an old colander, stands in the crock, and some of the rags are put into that to drain and dry. Next time I come for saltpetre rags I take them out of the colander, put some out of the crock into the colander, and put some new ones into the crock. If none are dry enough I dry them in the sun or stove-oven. When I want to fire my smoker I take a rag, perhaps a piece of an old shirt or dress, the size of my hand (I don't mean the dress but the rag is the size of my hand), touch a lighted match to it, roll it into a little ball, and drop it into the smoker. Then, without waiting to see whether it will burn or not, I fill up the smoker with chips, planer-shavings, or what-not, with no fear but there will be a good fire with a very little puffing.—*Gleanings* (American).

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

J. M. (Pontypridd).—*Celluloid for Hive-roofs.—A Protest!*—1. Without troubling Mr. Reid on the subject, we can of our own knowledge say that, had there been "any advantage in using celluloid instead of zinc for the purpose of rendering hive-roofs water-tight," our readers would have heard of it. We also take upon ourselves to say, that thin sheet-zinc is in every way more suitable for the purpose. Mr. Reid makes his hives watertight by painting with a solution of "Velvril"; the substance mentioned by him on page 64 last week, and which seems admirably adapted for the purpose. 2. Regarding our correspondent's "*protest*," he may disabuse his mind of any fear that the pages of the B.B.J. will be occupied in the direction indicated.

R. Morgan (Glam).—*Using Old Comb-foundation.*—Eight or nine years is a long time to have comb-foundation on hand, but if, as stated, it is "still quite sweet," it only needs softening by dipping in warm water before using, when, no doubt, the bees will take to it readily enough.

Labeille et la Ruche (Andover).—*Size of Hives.*—We consider holding ten or eleven frames most suitable to use in working for section honey.

A. Vallet (Paris).—The British Bee Journal will be sent to address given for 6s. 6d. per annum (post free). Of American papers, the best known are the *American Bee Journal* (weekly), *Gleanings in Bee Culture* (fortnightly), and *The Bee-Keepers' Review* (monthly). The price of each is one dollar per year in America (postage extra). We could supply the *American Bee Journal* and *Gleanings* from this office, post free, at 6s. 6d. per year, or the *Review* at 5s. 6d., cash in advance.

Nemo (Cheadle).—*Observatory Hives for Show Purposes.*—You cannot hepe to make a suitable observatory hive for successfully staging in competition without first seeing and examining a good pattern. By all means then visit a show before attempting to make one yourself.

E. C. W. (Romsey).—*Using Dry Naphthol Beta.*—N. beta crystals mixed in pea-flour will be quite useless. It must be used in *liquid form* only.

Editorial, Notices, &c.

LANCASHIRE AND CHESHIRE B.K.A.

ANNUAL MEETING.

The annual general meeting of this Association was held at Chapman's Restaurant, Eberle-street, Liverpool, on February 20, W. Tyrer, Esq., J.P., in the chair. There were also present the Revs. T. J. Evans, E. H. Hulton, E. Charley (Hon. Sec.), Miss E. Scott, Miss Walker, and Messrs. J. A. Bally, W. H. Forde, F. H. Taylor, Geo. Rose, J. J. Salisbury, T. D. Smith, W. E. Little, W. E. Hall, T. F. Harrison, Geo. Roberts, J. Wynne, W. H. Johnston, H. Firth, Dr. Anderton, F. Baend, J. D. Thorburn, T. Shuttleworth, W. H. Chapman, Wm. Lewis, T. Comber, E. P. Hinde, J. Cotterill, H. M. Bardsley, L. Collinge, and T. D. Schofield.

The report and balance-sheet having been adopted, a vote of thanks to the committee, officers, and hon. auditor was passed on the motion of the Rev. E. H. Hulton, seconded by Mr. W. H. Johnston.

The Rev. T. J. Evans (Cheshire) then proposed a resolution, which was seconded by Mr. George Roberts (Lancashire), in favour of the dissolution of the Association and the formation of separate Associations for each county. This resolution was, after some slight discussion, unanimously adopted, and a small committee was appointed to arrange for the division of the assets of the Association, with the exception of the library, which it was resolved should remain the joint property of the two associations, under the care of Mr. F. H. Taylor. Votes of thanks for their services were given to the Chairman, Mr. Tyrer, and the Secretary, the Rev. E. Charley, and the mention of the long and valuable services rendered to the L. and C. B.K.A. by Messrs. T. D. Schofield and George Roberts was very heartily applauded.

It is a matter of congratulation that while a certain amount of regret was felt by some members at the separation of the two counties the matter has been most amicably discussed and carried out, very friendly feelings being shown on all sides.

CHESHIRE BEE-KEEPERS' ASSOCIATION.

This Association was brought into existence at a meeting held in Liverpool on February 20, immediately after the dissolution of the Lancashire and Cheshire B.K.A. had been decided upon. There were present members of the old Association and others from various parts of Cheshire—Bowdon, Hale, Birkenhead, Chester, Rock Ferry, Heswall, Ashton-on-Mersey, Sale, Northenden, &c.

The Rev. T. J. Evans, having been voted to the chair, it was unanimously resolved that Mr. T. D. Schofield, Alderley Edge, and the Rev. E. Charley, Ince Vicarage, Chester, be appointed Treasurer and Secretary respectively of the Association. His Grace the Duke of Westminster, having kindly intimated his willingness to be President, a motion to that effect was heartily passed. It was decided that the Committee for 1899 should consist of fifteen members with a chairman, and that the Rev. J. F. Buckler, Bidston Rectory, should be asked to act as chairman for the present year. The following were appointed members of the Committee, vacancies to be filled up later on :—Rev. T. J. Evans, Tarvin ; Rev. E. A. Hutton, Tattenhall ; and Messrs. J. A. Bally, Oxton ; W. H. Forde, West Kirby ; W. E. Little, Chester ; J. Wynne, Waverton ; S. Woodward, Kingsley ; H. P. Rawson, Audlem ; John Cotterill, Bowdon ; W. Bradburn, Sale ; T. F. Harrison, Northenden ; G. Lambert, Comberbach ; and W. E. Hall, Sale.

It was further resolved that the Committee should draw up fresh rules and submit them for approval at the next general meeting, and that those who had acted as honorary local secretaries under the L. and C. B.K.A. should be asked to continue their services in that capacity. Till new rules have been made, the Association will be guided by the regulations of the Joint Association, so far as applicable, the subscriptions, &c., remaining as before, for the present year at any rate. It is hoped that members will pay in their subscriptions early, as there will be expenses to be met, and a large amount of labour is saved by the necessity for making applications being avoided. The Committee will be glad to consider any suggestions which they may receive with the object of making the Association as useful and successful as possible. Bee-keepers in the county who belonged to the L. and C. B.K.A. are asked to join the Cheshire Association, and to endeavour to induce others to do likewise. The Committee may be trusted to do their utmost, but much depends upon the energy and interest shown by the local hon. secretaries and individual members in making the Association known and in furthering its welfare by all the means which lie in their power. An expert will be appointed without delay, and he will commence the work of visiting in the county as early in April as the weather permits. A complete list of Vice-Presidents cannot be given at present, but the following have already expressed their willingness to accept the office: —The Earl of Haddington, the Hon. Cecil Parker, R. A. Yerburgh, Esq., M.P. ; J. H. Stock, Esq., M.P. ; Colonel Dixon, Chairman Cheshire County Council; J. Tomkinson, Esq., J,P., Willington Hall ; G. Barham, Esq., J.P., Bolesworth Castle ; P. Speakman, Esq., J.P., Fox Hill, Frodsham ; G. Atkin, Esq., J.P., Egerton Park, Rock Ferry.—(Rev.) C. CHARLEY, *Hon. Sec., C.B.K.A., Ince Vicarage, Chester.*

NOTTINGHAMSHIRE B.K.A.

ANNUAL MEETING.

The annual general meeting of this association was held on Saturday, February 25, at the Victoria Restaurant, Nottingham, Mr. W. S. Ellis, vice-president, in the chair. Amongst those present were the Rev. C. W. H. Griffith, Messrs. Geo. Hayes (secretary), P. Scattergood (auditor), Arthur G. Pugh, R. Turner, W. Herrod, S. W. Marriott, MacKender, T. N. Harrison, G. E. Puttergill, J. T. Faulkenbridge, W. P. Meadows, T. J. Waterfield, J. Herrod, T. Marshall, J. McKinnon, A. W. Codd, Mrs. Pugh, Mrs. Hayes, and Mrs. Harrison.

The annual report, which was read by the Secretary, referred to the season of 1898 as a rather disheartening one for bee-keepers, on account of the exceptionally dark colour of the honey gathered. Mention was also made of the shows held at Colwick, Southwell, and Moorgreen. The membership for the year ending December last was 156, against 148 of the previous year. Fourteen new members had joined for 1899, making the increase up to twenty-two. The Notts County Council kindly renewed their grant of £30 for technical instruction in bee-keeping for 1898-9. This had enabled them to have lectures, with demonstrations, and the bee tent at Colwick, Welbeck, and Kingston, with lectures at Elston, Lambley, Winthorpe, Costock, Bradmore, North Wheatley, West Bridgford, and Stanton Hill.

The balance-sheet showed total receipts, £65 0s. 11d., a balance of £4 16s. 1d. being due to the treasurer.

The report and balance-sheet were unanimously adopted.

Viscount St. Vincent, President of the Association, Mr. G. Hayes (secretary), and Mr. P. Scattergood (auditor) were re-elected, Messrs. Pugh and Hayes being appointed delegates to the British Bee-keepers' Association.

After the meeting a conversazione was held, and the Secretary delivered an address, which was illustrated by limelight slides. There were also the usual competitions, together with a prize-drawing for handsome and useful presents to members.—(*Communicated.*)

"OUR WILD BEES."

(*Continued*).

In writing the papers, which appeared under the above title from time to time last year in B.B.J., it was my intention to describe and say something about the most conspicuous of the various kinds of wild bees that would be flying at the time the paper would be in print. It was found to be impossible, however, to keep up this plan until the end of the season, there being so much subject matter of greater general interest and importance during August and September that the "wild bees" had to be shelved until a later date. Several of the autumn-appearing wild bees have not yet been touched upon, and I now intend to briefly describe one or two of the commonest of them, and so bring my papers to a conclusion.

Halictus is an extensive genus of small bees, some of which are very common. It occurs all over the world. There are thirty British species. The females may be found throughout spring and summer, but the males do not come out until July or August. The females may be known from all the other wild bees by the fact that they have only five segments of the abdomen visible, the sixth segment being almost entirely hidden under the fifth; the fifth segment bears a longitudinal ridge in the centre, which is very characteristic. They are furnished with powerful stings, taking their size into consideration, but only a few of the larger species are able to penetrate the skin of the hand. Like all the other wild bees (except the workers of one or two species of humble-bees) the *Halicti* would only use their stings as a means of defence on occasions when they are roughly handled in the fingers, &c. However much they might be irritated, they would never attempt to attack their foe on the wing, after the manner of wasps or honey-bees. There are many wild bees, as, for instance, the *Andrenas*, which possess fairly large stings, but these, owing to the feeble muscles that control them, cannot be used with effect upon human beings. Even with the *Halicti* and other wild bees that can sting the effects are very slight compared with those of wasps and honey-bees, so that on the whole the wild bees in this country may be considered as a comparatively harmless race. If a female of one of the larger *Halicti* be seized in the hand, in attempting to sting it will emit a peculiarly fragrant odour, which will remain about the hand for a long time. If she succeeds in stinging you the sensation, which is something between a fine prick and an itch, will be only a momentary one, and there will be none of the unpleasant after effects, such as swelling, &c., which so often follow the stings of other insects.

The male *Halicti*, as a rule, have the antennæ comparatively long, but this is not a character easy to distinguish in all the species.

Most of the species are brownish-black, and have faint broken bands of white pubescence on the abdomen. One or two common species have a metallic, bronzy-green appearance, which is more conspicuous in certain lights. Several of the species are very abundant, and literally swarm in flowers and on sunny banks during the latter part of the summer.

H. cylindricus is one of the commonest. The female is black, and is covered with short brown hairs; the second and third segments of the abdomen have a patch of white pubescence on either side at the base. The male is unique among our common *Halicti*, on account of its having the abdomen more or less red. Length, 8 to 10 mm. Very common and

widely distributed. Frequents blackberry, *Centaurea, Senecio*, Scabious, &c., and, in the garden, marigolds and Michaelmas daisies.

Sphecodes is an interesting genus allied to *Halictus*, and the species have a strong structural resemblance to the *Halicti*, but the abdomen is more or less of a bright orange-red colour, the head and thorax being black. They have the same peculiarity in regard to the time of the appearance of the two sexes as the *Halicti*, and as they associate with the latter, and the females have no polliniferous organs, they are generally supposed to be "parasitic" or inquilines with them. Certain rare species of *Sphecodes* are known to associate with certain other rare species of *Halictus*, but the relations between many of the common species of both genera seem still, strangely enough, to be a matter of conjecture, though there can be little reasonable doubt that the *Sphecodes* live as inquilines among the *Halicti*, as in the case of their rarer relatives.

Of all the species of wild bees, some of the *Sphecodes* are among the most difficult to separate. The males may be known for certain by examining the shape of the genital armature under a good Coddington lens; and in the females the sculpture of the apical dorsal segment affords reliable characters. As both these parts lie hidden in the natural state, it is a good thing to extract them with a fine needle before the insect becomes rigid. Specimens not so prepared are often quite impossible to name.

Sphecodes gibbus is one of the commonest of the larger species. The head and thorax are black, the abdomen is bright orange red, but black at the extreme base and apex. The whole insect is almost bare. It may be known from the other species by its clouded wings, few and coarse punctures on the thorax and, in the female, by the black spines among the hairs on the posterior tibiæ.

The armature of the male is very characteristic. Length, 8 to 10 mm. Occurs in company with common *Halicti* on various flowers in the autumn; the females may also be found in the spring hovering over sandy banks.

(Conclusion in our next.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

MARCH NOTES.

[3602.] We are now having some real winter weather, though the flowers are beginning to bloom and the bees to enlarge their brood-nests. This sudden and severe frost (10 deg. below freezing as I write) will come very hard upon bees after the mild winter, during which they have been much reduced in numbers, especially in exposed apiaries, to an extent that is quite unusual. When searching for needy colonies, damp quilts, and giving additional coverings a fortnight ago, I found the first comb of a three-frame nuclei quite empty of food, and when replacing it by a full comb of honey, I noticed that there was a large-sized patch of brood in the centre comb. I also found a good number of young bees already hatched. The severe night frosts and chilling winds by day, however, make me anxious about this little colony that has, so far, wintered well. I still hope to save them though, and also to be able to use the queen later on—seeing that the bees are now fairly strong in numbers, and have commenced brood-rearing so very early. This is just how young queens help to "win the cake," or rather full supers of honey. By having all stocks headed by young queens, and in good general condition in autumn, there are young bees in nearly every hive at this date; while if no attention is given to securing these essentials, and bearing in mind, too, that last season was not favourable to swarming, there is likely to be a large percentage of old queens which do not usually commence their maternal duties till the end of February or in March.

My remarks on swarming, in the February issue of your monthly *Record*, have brought me some correspondence on the subject, and to inquirers my advice is, do all that is possible to prevent the bees desiring to swarm by giving room just when wanted, or a bit in advance; also ventilation below the body of the hive, and if necessary shade; but if the bees wish to swarm, and do swarm, I find it best to establish the swarm as a separate colony. I used to cut out all queen-cells and return the swarm when I did not wish for increase, but this did not answer with me. It is natural for bees to swarm, and once they are imbued with the desire to do so nothing will stop them. If they cannot swarm by the usual fair means, because of the bee-keeper persisting in returning the swarm, they will by foul means, not seldom killing the old queen in order to attain their desire. A number of young ones are then reared in the hive, many of them from larvæ much too old for producing really good queens. In this way a queen raised from the older larvæ is first to hatch out, and in order to secure for herself the position of mother of the colony she kills her more reliable sisters. On the other hand, if bees of a returned swarm are permitted to take their natural course—after killing the old queen—by swarming again, they are headed by an inferior queen (sometimes by five or six such), to the bee-keeper's loss. The way I treat swarms now is to get the bees hived on the stand of the old colony as soon as possible, so as to gather in most of the flying bees. I

then transfer the supers to the swarm, and remove the old stock to a distant stand. It is wonderful how a good swarm will work to establish themselves in their new home. I usually hive the bees on about seven frames, giving full sheets of foundation as far as possible, in order to avoid too much drone-comb, especially in the latter half of the season. In the case of early swarms I contract the frames containing the old stock about seven combs, and by this means some surplus honey is often secured from this also. Three nuclei (not more) may be formed from the swarmed stock, unless worked two in a hive on the "Wells" or double-compartment system.

Bees in this district usually store too much pollen, but up to now they have been kept within the hives by chilling winds, and the pollen from the hazel catkins and the crocus is wasting. The large quantity of pollen stored last autumn, however, provides the bees with the food necessary for brood-rearing. It is important that bees have provided for them a regular supply of clean water within a few yards of their hives in the breeding season, otherwise there is much loss of bee life in searching for water while cold winds blow. If a natural supply of water is near the importance of a water trough is less urgent, but in all cases a dish of water is useful, even if there is a stream or pond near, if placed in a sheltered sunny corner. Bees sometimes visit queer places, presumably in search of salt, so I add enough salt to make the water slightly saline. A good-sized alighting board standing up from the ground to the front of hives is helpful to the bees, especially at this season, when they return wind-beaten while carrying home loads of the water and pollen indispensable in March. Wind breaks are also useful, and in some apiaries are necessary, but fortunately there are not many apiaries where the hives have to face the keen east wind in an open field as mine do. A windbreak may be formed temporarily by covering hurdles with canvas or opened bags, or the hurdles may be neatly thatched with straw.

I add a few notes on work in the bee-keepers' garden :—Such work as should have been done last month has, owing to wet weather, mostly to be done now. Successional sowings of broad beans and peas should be made every fortnight. Sowings of parsnip, carrot, and onions should also be made as early in March as the weather and the condition of the ground will allow. After so much rain, newly dug ground is in bad condition for planting, and will be much improved by the present severe frosts. It is better to wait awhile than to plant ground that is in bad condition. Where possible, early potatoes should be got in by the middle of March, and those for the main crop at the end of the month. If potatoes can be laid out singly in a dry, light room (or on a shelf) to form strong sprouts, they may be, otherwise they should not be allowed to form long weakly sprouts in bags or in heaps. I like to defer the sowing of seeds of bee-plants, such as borage and sunflower till May; these flowers then come on after the main honey flow is over, and they become much more useful as bee-plants. At the same time, sowings of wallflower seed are also made to transplant in autumn for the bees' use in the spring of next year. Mixed flower borders should now be dug and made tidy for the spring before much growth is made, as most plants can now be seen by new growths being made. In the garden, as in the apiary, what is done must, to give satisfaction, be done well.—W. LOVEDAY, *Hatfield Heath, Harlow, Essex, February* 25.

STERILISED HONEY FOR BEE-FOOD.

[3603.] A subscriber having drawn my attention to an article by Dr. C. C. Miller in the BRITISH BEE JOURNAL for February 16, 1899, on the sterilisation of honey for bee-food, it occurred to me that if intermittent sterilisation were resorted to, all danger of infection might be avoided.

The food suspected of containing Bacillus Alvei should be boiled for fifteen minutes, the bacteria present being thus destroyed, leaving only the spores alive. It should then be put in a warm place for a day or so for these spores to develop into bacteria, and on then boiling for fifteen minutes they will be destroyed in their turn. A third boiling after a day or two would render the food absolutely sterile. This may seem a troublesome process, but it is certain to destroy all living bodies, both bacteria and spores, which one boiling, even for a lengthened period, will not always effect, whilst a large amount may be prepared at once. Of course, *once* heating under pressure at a temperature of 110 deg. C. (equal 230 deg. Fahr.) for twenty minutes will render the honey equally sterile, but a digestor is not at every one's disposal.

If the honey be stored in vessels which have been baked in a hot oven for half an hour, it will remain safe for an indefinite time.—J. F. H. GILBARD, F.I.C., F.C.S., *Clapton, N.E., February* 24.

(*Correspondence continued on page* 86.)

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Mr. Wide, whose bee garden forms our picture this week, sends us so interesting an account of himself and his bees that to add to it would spoil his "text." He says :—

It is now about fourteen years since I started bee-keeping, and have only very gradually increased my stocks, partly because, until last year, I had not much room in my garden, which was also too close to neighbours to be suitable for a large apiary. Having, now, however, taken up my abode in the place seen

in photo, where I have almost unlimited space, I hope to increase my number of hives at will, and intend to keep a fairly large apiary. Part of my present stock is seen in the photo. My first swarm was bought from a labourer who had got the bees in a skep, and came in the evening to know if I would buy them. Knowing nothing about bee-keeping or bees, my first impulse was to decline the offer; but my visitor, seeing my fear of the bees, said, "It's all right, maister, they won't hurt 'e; put 'em out in the garden." To cut the matter short, the bees were purchased; but I did not feel very sure of my new live stock being amenable to my handling. However, I got out fairly early in the morning half expecting to find bees all over the garden, but to my surprise they were very quiet, and continued so until I became attached to the busy workers, whose labours I watched with increasing interest. Then the autumn came, and with it the time when, according to custom, "the bees must die!" in order that I might have the fruit of their labours. A friend of mine, possessing some little knowledge of the "job," undertook the sulphuring for me, and, of course, I got the honey. But I did not like the "killing" business at all; indeed, I felt, on seeing the thousands of little labourers dead next morning that my honey was very dearly bought, and pleasure gave place to pain at the sight of such a veritable holocaust! I learned such a lesson from the sight before me as I shall not soon forget. My attention was soon afterwards directed to the bar-framed hive, and, as a clergyman near was just then selling his hives by auction, I purchased the white hive seen on the right near where I stand. This hive did not take the "standard frame," of which I then knew nothing. Unfortunately, I had other hives made like it. These hives have been a great nuisance since I acquired some knowledge of the standard frame; but they are fast disappearing, and I hope by the end of '99 no hive not made to take the "standard" will remain in my possession. Some of those seen are of the "combination" type, but all my new ones take the standard frame.

The three hives immediately in front (and I have others) are the "W. B. C.," only that I fix the inner walls to the outer. This is my favourite hive, and I prefer it to all others I have any knowledge of; it is easily worked, and yields results as perfect as can be. I have one "Wells" hive (seen on the left), but I call it the "ills" hive, from no disrespect to the gentleman whose name it bears, but I have tried it now for several seasons and in my hands it yields neither pleasure nor profit. I am seriously thinking this year of trying to use it for queen-rearing by dividing it up. I make my own hives, and can therefore please myself as to materials, but I regard a colony of bees as worthy of a good home—warm, dry, ventilated, and kept wholesome and clean. In carrying out this idea my usual mode for cleaning is this: When bringing out new hives for use I transfer combs and bees

MR. EDWIN WIDE'S APIARY, HEMYOCK, DEVON.

into them in the spring; the hives just emptied are then scrubbed with boiling water and allowed to dry. I next paint the insides with a strong solution of carbolic acid, and give outsides two coats of good paint. When these renovated hives are dry and ready for use again, other stocks are transferred to them. I never forget "Naphthaline," spring and autumn; and in this way my bees are kept healthy, and notwithstanding foul brood and other diseases not far distant from me, I have not yet seen it in my apiary.

In working for surplus I use shallow frames, as I can dispose of almost any quantity of extracted honey in 1-lb. screw-cap jars. My averages in honey returns are very satisfactory to myself, anyway. The largest quantity I ever took from a single hive was 160 lb., but I do not test the "takes" from separate hives.

Bee-keeping with me is an ever-growing interest, and I have never had so much real pleasure in any other such pursuit. The knowledge acquired I owe very largely to your valuable little paper, the B.B.J., which has been my companion for years, almost as long as I have kept bees, and I take this opportunity of thanking you, Messrs. Editors, for the kindness and courtesy with which you have so readily and, may I say, *patiently* replied to my queries.

I am often visited by bee-keepers for information, and my help is frequently sought and rendered at other "homes." I have also helped many in starting bee-keeping.

The Devon Bee-Keepers' Association elected me on the Council as a District Secretary last year, and I also presented myself for examination at Exeter, and obtained a third-class expert's certificate. I hope to seek the higher certificates later on, if time allows. I scarcely know if I shall have the chance, because I may tell you that inside of my "hive" I have a lot of youngsters, who need a little more than "royal jelly" to keep them going, and I cannot give too much time to *bee-study*, seeing that I do a little farming, am assistant overseer, clerk to School Board, assessor and collector of taxes, clerk to Technical Education Committee, also to the Parish Council, and a few other things that effectually put a stop to my becoming "rusty with idleness."

I should not like to close without saying (like other of your readers) that my good wife renders me valuable help in bee-management, and would, I think, almost secure an expert's certificate if she sought it.

CORRESPONDENCE.

(*Continued from page* 84).

"YOU KEEP BEES, WE DO THE REST."

[3604.] Not so many years ago in this district (on the borders of Wychwood Forest), it used to be said that "a labourer ate venison as many times in a month as the King did in a year;" and I have heard yarns to the effect that when word came "The keepers are coming to search" what busy work it used to be preparing for them. Venison pies were carried out and hid away in the fields amongst the standing corn, and whole carcases of deer were slung bodily up amongst the branches of the apple-trees out of sight. Then they waited, feeling no doubt something like I did myself on turning to Mr. Brice's letter after reading his title "You Keep Bees"—and the "Rest" in contents list—I felt like a stoic whose mind wandered; but now, having read 3600 (p. 75) I see he did not take it unkind of me to criticise where I thought criticism was required. I am, therefore, glad to assure him neither unkindness nor injustice were meant, but, from his letter I can realise what a veritable Eden for bee-keepers must be the radius covered by the Kent and Sussex Association! With the picture of assistance given in every direction save "eating" the honey of its members, one is almost ready to ask, "Any empty houses your way?" (and when the expert calls he shall stay to tea and *eat* some honey). Round about here, however, every man seems to try and walk his own way, and thus learns to exercise self-help, instead of leaning on others. I read the "context" as well as that kodakial "text"; that, indeed, was the "last straw" which decided me to have a friendly "say" to friend Brice, feeling convinced that what we want is not bee men or women who rely on outside help, but who master the subject for themselves with the kind assistance given.

One speaker at the meeting of the Oxfordshire B.K.A. last Saturday said, "They found it cost so much money because some people got hold of the idea that by paying a small subscription they secure the services of an expert to put them in working condition for the year. There were cases where the expert put in nearly a whole day's work in looking after other people's neglect."

I thank Mr. Brice for replying and hope to see more photos and more from his pen, as I am always glad to learn anything useful connected with bee-craft.—JOHN KIBBLE, *Charlbury, February* 27.

BEES AND RED CLOVER.

[3605.] Will you kindly give your opinion concerning the accuracy of the following statements, quoted from "Darwin's Origin of Species," chapter III., paragraph headed, "Complex Relations of all Animals and Plants to each other in the Struggle for Existence"?:—

"Humble bees alone visit red clover, as other bees cannot reach the nectar."

Chapter IV., paragraph headed, "Illustrations of the Action of Natural Selection, or the Survival of the Fittest":—

"The tubes of the corolla of the common

red and incarnate clovers (trifolium pratense and incarnatum) do not on a hasty glance appear to differ in length; yet the hive bee can easily suck the nectar out of the incarnate clover, but not out of the common red clover, which is visited by humble bees alone; so that whole fields of the red clover offer in vain an abundant supply of precious nectar to the hive bee. That this nectar is much liked by the hive bee is certain; for I have repeatedly seen, but only in the autumn, many hive bees sucking the flowers through holes bitten in the base of the tube by humble bees.

"The difference in the length of the corolla in the two kinds of clover, which determines the visits of the hive bee, must be very trifling; for I have been assured that when red clover has been mown the flowers of the second crop are somewhat smaller, and that these are visited by many hive bees."

I do not know whether this statement is accurate; nor whether another published statement can be trusted, namely, that the Ligurian bee, which is generally considered a mere variety of the common hive bee—and which freely crosses with it—is able to reach and suck the nectar of the red clover.

I am particularly anxious to know whether the Ligurian bee has such an advantage over the common hive bee, because, if so, they should give far superior results in districts where clover is the chief source of honey. I should also like to know whether the hybrid Ligurian possesses this advantage over the ordinary hive bees.

I have six stocks of ordinary bees and one of Ligurians; and the only difference which I have as yet detected is that the Ligurians are the first to get into mischief, nearly all the attempts at robbing, both from the honey-room and from other hives, are made by them, and half the stings are given by them.—L. H. H., *London, February* 23.

[The "statements" made by Darwin may be safely accepted as "accurate" so far as the highest human ability and deep study of the subject can make them. We, therefore, do not care to offer any "opinion" other than advising our correspondent to believe his "Darwin" in this matter.

Regarding the supposed longer tongue of the Ligurian bee, most bee-keepers of experience now look on it as an exploded fable.—Eds.]

PAINTING HIVES.

HOW TO DO IT WELL AS HOME WORK.

[3606.] At this time of year, when so many of us have been busy hive-making (home-made, of course) for the coming season, a few notes on painting—which means finishing-off the same—may be useful.

Well, our hive being ready for painting, give a good rubbing all over with glass-paper, then brush it well to remove dust, &c.; next coat all knots in the wood with "patent knotting" (enough may be had from any oil-man for 2d. to serve for half a dozen hives). Now let us make ready our paint, which must be *good*, and we will mix it ourselves—for those paints usually sold in tins ready mixed have often a basis of "whiting" or chalk. Well, ours may be of the following proportions, altering the weights, &c., according to the quantity needed:—½ lb. white lead, 1 oz. patent driers or terebene; mix with raw linseed oil to proper consistency, and add a teaspoonful of dry red lead, this will form our "first coat." Our brush is the next item; the handiest and most useful size is a "No. 7 sash-tool." This, if new, must be bound half way down the bristles with string to prevent splashing. When bound, soak the brush for two hours to swell the wood and so prevent bristles from dropping out.

Now proceed with the actual "priming." Take all parts to pieces, turn up the hive-stand, and thoroughly coat same underneath, then turn right way up and do top of same; place four small pieces of wood upon stand, invert floor-board, paint underneath, then reverse and do top of same, putting it into position on its stand, but with bits of wood between to prevent "sticking" of paint. Next do the under edge of body-box, then the sides, working paint well into plinths. (These ought to have had a coat of paint underneath when they were being nailed on) and "laying off" the same smoothly and evenly. Then paint "lifts" and finally roofs, putting each in its place as finished, but with small pieces of wood between to prevent sticking. Allow a couple of days before the next coat, putting the brush in water in the meantime to prevent it getting hard. Now, again glass-paper hive, &c., with worn paper, stop all nail-holes, &c., with hard "stopping" (equal parts of white lead and putty), give a good brushing, and paint as before.

Recipe for second and third coats:—White lead ½ lb., patent driers, or terebene, 1½ oz., equal parts of "turps" and raw linseed oil; tint, according to "taste," with a small quantity of yellow ochre, umber, or Venetian red in oil (a pennyworth of either is sufficient) to make a yellow stone colour, brown stone colour, or light pink respectively. We may give our hives two or even three coats of this, which will secure a thoroughly good and weather-proof hive. If we want a hive to dry quickly for urgent use, give two coats of "knotting," which dries in an hour, and one coat of finishing paint. To get rid of smell quickly, when the paint is dry, well wash in clean, cold water.

Here's a "wrinkle" to get a die for cutting comb-foundation to size:—Ask your local glass dealer to cut you a piece of window glass to size, rub the sharp "aris" edges on a piece of stone, lay on foundation, get a sharp knife, and there you are!—Will. Hampton, *Richmond, February* 16, 1899.

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING FEB. 25, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Feb. 19....	30·07	43 0	51	37	14	44·0	—
,, 20....	30·17	42·1	45	42	3	43·5	·03
,, 21....	30·29	38·9	47	35	12	41·0	·01*
,, 22....	30·31	37·0	51	29	22	40·0	—
,, 23....	30·24	30·2	51	24	27	37·5	—
,, 24....	30·22	30·0	51	25	26	38·0	—
,, 25....	30·30	35·0	44	30	14	37·0	—
Means	30·23	36·6	48·6	31·7	16·9	40·2	·04†

* Hoar-frost. † Total, 0 4.

The week's rainfall, viz., ·04 in., =904·92 gallons, or 4·04 tons to the acre, or 3·2 oz. to the square foot. Mean vapour tension, 0·193 in.; mean relative humidity, 87 per cent.; mean temp. of the dew point, 33°·2. For the week ending February 18, the mean temp., viz., 44°·7, was + 5°·8, and the rainfall, viz., ·51 in., +·11 in. The mean temp., January 29 to February 18, viz., 41°·1, is +2°.8, and the rainfall, viz., 1·80 in., +·46 in. The mean temp., January 1 to February 18, viz., 40°·7, is +3°·3, and the rainfall, viz., 4·16 in., is +1·03 in.

REMARKABLE FEBRUARY TEMPERATURE.

Readings of verified thermometers, of which those in the shade were mounted in a Stevenson screen, taken at 9.0 a.m. daily at Ketton, near Stamford, Rutland, February 6-10 1895:—

1895.	Shade. Temp. 9 a.m. deg.	Max. deg.	Min. deg.	Range. deg.	Mean. deg.	Min. on Grass.
February 6	4·5	25	— 3	28	11·0	— 5
,, 7	15·5	26	— 4	30	11·0	— 6
,, 8	6·3	28	— 8	36	10·0	— 13
,, 9	12·5	34	5	29	19·5	— 1
,, 10	15·1	30	— 2	32	14 0	— 4
Means	10·8	28·6	— 2·4	31·0	13·1	— 5·8

The weather of the first half of the month was the most severe remembered by the oldest persons. In the district, laurels and many other shrubs were killed, and several large trees cracked in the solid trunks.

FRED. COVENTRY.

Queries and Replies.

[2163.] *Honey as Bee-food.*—I am sending you a small sample taken from some honey extracted from uncapped combs, so as to free the latter from all unripe honey. I have several pounds of it, and when the first quarter of an inch is scraped off the rest of the contents of each jar is like sample. It hardly tastes like fully ripened honey, nor does it seem to be fermented. 1. Can it be put to any use as bee-food? 2. If so, may I melt and give it to the bees later in the spring or would it be injurious to them? My twenty hives have, I think, come through the winter well and the bees are just beginning to work on snowdrops, crocuses, and the white arabis; the latter is a flower they always seem to appreciate in the early spring. While hoping that we shall get honey of a better quality this year than last I may add that I have also about 30 lb. on hand of last year's honey, in colour rather dark, and not of very pleasant taste. I was thinking of reliquifying this, thinning with water to the proper consistency and then medicating with naphthol beta for feeding the bees in the early spring. Would you advise this if my bees require stores?—(REV.) MARCUS W. B. OSMASTON, *Goodnestone, February* 22.

REPLY.—1. We find no signs of fermentation in sample sent. It is of fair quality, too, and will do very well for bee-food in spring. 2. Not in the least.

[2164.] *Bee Parasites.*—Having read the B.B J. for some time and seen how kindly you answer the many questions asked by beginners, I venture to ask a few questions about my first stock of bees, which I bought for £1 in April, '98, from a novice like myself. They had stood all the previous winter with sections on and calico quilt over frames, with small hole in centre. This should, of course, have been taken off before sections were put on. There seemed to be something wrong with the bees from the first; they stood round the entrance fanning their wings very much, so I made my first examination in the light of my knowledge, after having read Mr. Cowan's "Guide Book." I soon picked out the queen, and to my surprise, I observed sticking very tightly to her thorax three small brown insects, resembling miniature bugs or spiders. A good many of the worker-bees also had some upon them. Can you tell me what the insects are? I only got four sections filled during last summer, but the season was a poor one. There was, however, plenty of honey stored in frames, so I took away sections and packed the bees up for winter. They were all alive to-day, and seemed fairly strong in bees. With your kind help I hope to do better this year.—ALFRED HOLE, jun.

REPLY.—The insects seen are no doubt the parasite known as the *Braula Cœca*, or blind louse. Full particulars regarding this parasite, with illustrations of it, will be found in B.B.J. of December 22 last year.

[2165.] *Queen Cast Out Dead.—A Cure for Infantile Bee-Stings.*—Enclosed is what I take to be a virgin queen, which was found dead on the alighting-board on Tuesday, the 21st inst. I have seen a drone flying out on two occasions from the same hive, viz., on 15th and 19th inst. Is not this very unusual? Your opinion on the same will probably be interesting to others as well as myself. While writing I may be allowed to relate an incident which occurred in my bee experience, now

extending over three years. On a fine day in June, 1897, when bees were flying strong, and my infant boy (aged thirteen months, and just beginning to walk) got in their way, and was stung on the tongue. There was no mistake, as I extracted the sting with a pair of tweezers. His mother gave the little chap the usual comforter for baby troubles, and he was soon all right again. I think the effect of the mother's milk was such as to entirely kill the poison, as there was not the least signs of swelling or inconvenience afterwards. I wish every success to B.B.J., from which I have gained much valuable information.—J. TURNBULL, *Rotherham, February* 21.

REPLY.—The dead queen received had evidently been "balled" by her own bees, but microscopical examination showed that she had been fertilised.

[2166.] *Stimulating Bees in March.*—I notice my stocks that have young queens, given in September last, are carrying in pollen (lauristina) freely. Do you think it advisable to provide artificial pollen and drinking water near the hives, or would it be better to provide sweetened water in feeders? I am anxious to give the bees all the assistance I can at this season, but do not want to overdo it. Still, taking into consideration the glorious weather we are having here just now, it occurred to me that they might advantageously gather a quantity of artificial pollen at less expense to the colony than would be caused in gathering the genuine stuff?—D. G., *Ilminster, February* 27.

REPLY.—Where natural pollen is plentiful it is worse than useless to give the artificial substitute. Water, on the other hand, is always useful, but should not be sweetened, or given inside hives in feeders. The bees had best be allowed to gather natural pollen.

[2167.] *Queen-Rearing.*—Referring to 2854 of B.J. (p. 146), April 15, 1897, will you kindly tell me if this mode of obtaining queen-cells will answer in this country? Sixteen frames seems a large number to cover with bees. Would the plan answer with a ten to twelve frame stock?—C. M. WATSON, *Kidderminster, February* 26.

REPLY.—You had better adhere to such plans for raising queens as have been tried and found to answer in this country, rather than follow methods adopted in countries where the climatic conditions are so entirely different.

[2168.] *Bees Perishing in February.*—Enclosed you will find pieces of comb-foundation and a few dead bees. In September last I was offered a swarm of bees, and in order to be ready for them made a hive from directions in an old bee book by Hunter. When the swarm arrived I had no difficulty in getting the bees into frame-hive, though having no previous knowledge of bee-keeping beyond reading, and only read Mr. Cowan's "Guide Book" once through. I soon found that I must get some honey for the bees to keep them going, so I bought two combs from a friend who can neither read nor write; I then made syrup and candy according to directions in "Guide Book," but omitting naphthol beta. The bees went on all right until I was afraid they were running short of stores, and after examining slightly on the 28th last month, I gave them more food, though there was still a little of the stores left. The bees also seemed strong and in a flourishing condition, besides having been out flying regularly up to this date. For some days after, however, I did not see any bees coming out of the hive. I therefore became anxious for them, after reading so often in the B.B.J. about bees in different parts were gathering pollen, so decided to have, and on opening the hive to see how matters really stood, I found the whole of the bees dead! Can you give any opinion as to the cause of death?—H. O. ODDY, *Harrogate.*

REPLY.—The two small pieces of comb with dead bees in cells point to starvation as the cause of death. The old combs are also infested with the larvæ of wax moth. We cannot quite understand how the hive comes to contain comb foundation untouched so far by the bees if the swarm was fed for some time after being hived. Some sign of its being built out into comb should certainly be visible from a thriving swarm helped on with combs and food as stated.

VARIATION IN BEES.

There are few persons living in the country who do not readily recognise the great variations or individual characteristics among horses and other domestic animals; indeed, we never find two exactly alike. There is a difference in size, build, or form, disposition, temperament, constitution, &c. Yet few seem to think that each colony of bees varies from the others in the same way. Most persons may admit that the several varieties of bees are quite different in character, yet they would be greatly surprised to be told that there is as much variation between colonies of the same kind as the average difference between the many varieties.

Any one who has had even a little experience with bees will readily admit that some colonies are far more vicious than others. I remember one such colony. It was with the greatest difficulty that the hive could be opened and the combs lifted out, and this trait remained until a new queen was given.

Differences in comb-building were very marked before the advent of comb-foundation. Some colonies would build their combs straight and handsome, while the combs of others were so crooked as to be almost worthless.

In the surplus-boxes, too, some colonies build their combs slowly, perhaps, but every

available bit of space would be occupied, while other equally strong colonies would perhaps leave their combs with the edges badly attached to the sides of the box or section.

We also know that some colonies gather much more propolis than others, to the disgust of their keeper, daubing the inside of their hive with it until it runs down the sides. They leave the legitimate pursuit of honey-gathering to daub the inside of their surplus boxes and half-finished combs with a coat of bee-glue.

The business thrift of some colonies is also very marked. With a far less number of bees than their neighbours, they make the most of their condition At the end of the season they will have more to show for their summer's toil than colonies that were far more populous in early spring.

Again, who does not know that we find some colonies are most uncomfortably shiftless or actually *lazy*, like not a few families of the *genus homo*. No matter how much we try to help them up, they are always behind and always in need.

The bees of some hives, too, gather much more pollen than others, apparently leaving the more laborious employment of gathering nectar, because it *is* laborious, thus filling their brood-combs, crowding the mother bee for room, and even spoiling their surplus honey by filling with pollen some cells in almost every section.

The combs in some hives can be handled with the greatest ease, with or without smoke, while it requires great care to handle the bees in others.

The swarming impulse or instinct which seems feeble in some colonies is very strong in others; so much so that unless you let them have their way, or do *something* to satisfy them, they will sulk and do little or no work.

Some colonies start work earlier in the morning, or later in the evening, or gather honey from some kind of flowers that others neglect.

I remember one colony, a few years ago, that had the peculiar habit of tearing out its brood-combs in early spring. I never could quite understand their object, as their combs were comparatively new and clean and free from anything that I should expect would annoy them. The first time I found them in this condition I supposed it the work of mice; and I spliced or fitted in quite a large amount of comb to fill up the places that had been gnawed out. The next spring the same thing was repeated, when I became satisfied it was the work of the bees and not of mice. If I remember rightly, the process was repeated the third spring; when I put a stop to it by removing the queen and introducing one whose progeny would spend their time and strength at something more useful than tearing down their combs.

Then we have more or less variation in colour, size, shape, and other traits of character that I have not time to mention.

Of course, we bee-keepers understand that all these various traits of character are represented in the queen of the colony; and that we may treat each colony as one individual; and that the character of our colonies will depend upon that of the queen and drone with which she has mated. Aside from the characteristics of her offspring, the queen has traits peculiar to herself; as her size, her willingness to remain on the comb and continue her egg-laying when the comb is removed from the hive; and, more important than all others, her ability to lay eggs.

Here we see the necessity of having our hives stocked with the best queens, that have mated with the best drones to be had.

Again, the variation in our queens and their progeny should not be looked upon altogether a disadvantage, but rather as the sure promise of great improvements in bees in the near future. Already, I believe, better queens of the Italian race can be found in this country than in Italy.

May we not then prize this disposition to vary among bees as something of great value to intelligent and progressive bee-keepers?—J. E. Crane, *Bee-Keepers' Review* (*American*).

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Alpha (Southport).—*Tunisian Bees.*—1. A very full account of the North African—or Tunisan—bee appeared in the B.B.J. dated respectively June 23, 30, and July 7, 1892; to this account we have nothing to add. 2. Queens hatched in May, 1898, will be at their best this season. 3. The "skewer" should be pushed in the empty skep from the inside of latter when pinning the full and empty skep together before "driving" bees. If forced *well home* it will never work loose when so placed.

W. P. (Lincs).—*Helping Members of Association.*—We are quite sure that the Lincs B.K.A. gives help to members in selling their surplus honey. You had, therefore, better join at once.

E. P. S. (Birmingham).—*Re-queening Stocks.*—1. If the Carniolan stock is so "grandly strong" now, as stated, it would be very unwise to think of re-queening until the autumn of this year. 2. Mid-March is quite soon enough to start stimulative feeding.

"Beeswing."—*Moving Bees 300 Yards.*—It is somewhat dangerous to move hives 300 yards at this season after bees have begun to fly freely; but, as the lesser of two evils, they had best be moved at once, and have the hive-entrances altered in appearance so as to compel the bees to notice the change. Don't confine the bees as proposed.

Editorial, Notices, &c.

Death of "Lordswood."

Just while preparing this issue for press we received the, to us, inexpressibly sorrowful and totally unexpected news of the death of our dear friend and esteemed contributor Mr. Herbert J. Sands, well known to readers of this journal as "Lordswood." We have no time—nor indeed the heart—to say more here, but hope to refer to the sad event next week. Meantime, Mrs. Sands has consented to our publishing her note, which only an hour before these lines were penned conveyed the news of her son's death in the following terms :—

"You have no doubt wondered why the bound volume of the British Bee Journal you so kindly sent my son as a present some weeks ago has not been acknowledged. He was dangerously ill at the time, and we could not write. Will you, therefore, allow me to thank you for it now, and to tell you of the death of our dear son, Herbert J. Sands, the 'Lordswood' of your journal. When he wrote his last paper—which appeared in November last—on 'Our Ivy,' he was very unwell, and soon afterwards had a serious breakdown, and became very ill indeed. However, he rallied, and we spent a quiet though very happy Christmas together, rambling about the lanes and over the hills, Herbert admiring—as always—the lovely colour of the mosses at the foot of the pine trees, gathering sprays of red-berried bramble, curious wild flowers, seed-pods of plants, &c., and on reaching home arranging them in vases and over the pictures. He took the greatest delight in having an enforced respite from the cares of business, and remarked how glad he was of the rest. He seemed to be studying and enjoying everything, and would fetch us out of doors to see the beauty of the clouds, the sunsets over the hill, the lovely moonlight nights, and the calm majesty of the planets as they rose. All of these things he enjoyed with the deep reverence of one whose heart was in touch with the secrets of Nature, and who looked up through them to Nature's God whom he worshipped with the simple faith of a child. He was always, as you know, quiet and reserved, never wasting words in idle talk, but delighting in a romp with children, of whom he was very fond, while the little ones almost worshipped him. We laid him to rest on Saturday last, March 4, in the Churchyard at Lickey, a sweet spot, one we know he would have chosen, where the sunshine he so revelled in will fall upon his grave. Friends from far and near gathered round to mourn his loss and lay the flowers he loved so much over him. One dear little girl in the fulness of her loving and sorrowing heart made up a lovely poesy and wrote on the card 'With love from his little friend Mabel.' A touching tribute of affection ; but every one who knew him loved him, and he has left us very sweet memories."

LEICESTERSHIRE B.K.A.

ANNUAL MEETING.

The annual general meeting of this Association was held at the Victoria Coffee-house, Leicester, on Saturday afternoon, March 4. Mr. H. M. Riley presided. There was a good attendance, amongst those present being Messrs. W. P. Meadows, Shenton, Cotton, Falkner, Brown, Dilworth, Atkinson, C. W. Brown, Smith, Carter, Palmer, Toone, A. G. Pugh (Notts.), and J. Waterfield (hon. secretary). In presenting the annual report and balance-sheet, the Committee had again to announce an active year's work, which they had good reason to believe had proved of considerable service in the advancement of modern bee-keeping. The membership list continued to show satisfactory progress ; thirty-eight new members having been enrolled during the year, whilst nineteen had resigned from various causes. The number now on the books was 191, the largest recorded membership since the formation of the Association. The past honey season had proved very disappointing throughout the county, and indeed throughout the country generally. Indeed, it would take a long time to forget the honey-dew season of 1898, such an experience not having been felt for upwards of fifty years. The balance-sheet showed receipts for the year, including a balance in hand of £3 11s. 6d., amounting to £55 18s. 5d., the payments being £44 10s. 1d. The retiring officers were re-elected, with the Duke of Rutland as President. This concluded the business portion of the proceedings. After partaking of tea, to which sixty-three members sat down, the meeting resolved itself into a conversazione. The ex-Mayor, Alderman Wakerley, took the chair in the unavoidable absence of the Mayor. Several interesting prize drawings took place. Prize essays were also read on the following subjects : (1) "Beginners difficulties in bee-keeping," (2) "Advantages of the bar-frame hive over the straw skep," (3) "How to work a single (bar-frame) colony during one year," (4) "How to obtain the largest weight of honey from a bar-frame hive during one year" ; the respective winners being : (1) Mr. E. J. Underwood, (2) Miss F. M. Kilbourn, (3) Mr. T. Cumberland, (4) Mr. W. W. Falkner. The several papers were discussed and the various prizes distributed by the Mayoress, a very enjoyable evening being spent.—John Waterfield (hon. sec.).

PARTHENOGENESIS

By R. Hamlyn-Harris, F.E.S., Member of the International Entomological Society of Guben, &c.

If we seek to understand the full meaning of the term "parthenogenesis," we must regard

its application not only upon the "insecta," but also upon those forms of life which Nature has seen fit to endow with *similar* powers of reproduction. But if we regard only one of Nature's subjects, and endeavour to apply a mere "science" to its metamorphosis and life history, we shall soon find ourselves in a very awkward position indeed, and one calculated to produce no small amount of criticism.

If, on the contrary, we strive to grasp the harmony of creation, and how each creature is set in its appointed place, with its given functions and duties to fulfil, and we are thus enabled in some small way to trace the workings of an Infinite mind, how great our reward.

"Ignore all selfish ends and interests of thine own;
He lives for little good who lives for self alone."

When the term parthenogenesis was framed by Professor R. Owen, it was intended to convey the ideas of fissuration as well as procreation without fecundation both in plants and animals. Now, however, it is applied in a *somewhat more* restricted sense. Before this mode of extension of species was understood to hold good in the honey-bee (as discovered by Dr. Dzierzon, and worked out chiefly by Von Siebold and Leuckart) it was known to exist in other insects. Von Siebold, to whom we are greatly indebted for his experiments and subsequent writings on the subject, draws attention to the fact of its being in no way accidental, but that it has "a definite position in the history of the development of organic beings, being especially manifested in the *Cœlenterata*, the *Cestode* and *Trematode Entozoa*, and in certain families of insecta."

Cœlenterata is the name given to a sub-kingdom of low organised invertebrata, commonly known as zoophytes, because they partake of the nature of animal and vegetable at the same time. No doubt some of your readers will remember the frequent references under various and interesting circumstances of zoophytes by Charles Kingsley in his "Two Years Ago." The *Entozoa* are also a series of low organised invertebrata with this difference, that the majority inhabit the bodies of other animals during the greater part of their existence. In these cases the production of successive generations is simply wonderful, but would take up too much space and could hardly be said to bear upon the present position were I to go further into detail.

In the case of insects, however, we find many striking phenomena—as, for instance, the viviparous aphides or plant lice, and of which one hears so much at certain seasons, one of the longest known but the latest to which the law of parthenogenesis had been applied.

There are no doubt many, especially those who take an interest in their gardens, to whom the rapid increase of plant lice is a puzzle. And it is evident, if gardeners and others strove to understand more the life histories of garden pests, they would be saved much vexation, as *timely* interference would often work wonders. The perfect winged female and male are only to be seen in the autumn months, and, as far as is known, die soon after they have performed their duties—the female laying eggs in the recesses of plants and so forth, and from these eggs, laid in the autumn but hatched in the spring, only imperfect, viz., wingless aphides, result, which, however, soon in their turn produce, without any concurrence of the male, an offspring—generations of imperfect females not hatched from eggs, but born alive—so numerous that they often extend to nine or ten successive generations until the last brood—after a period of about twelve weeks during the summer—brings forth the male and perfect female "winged," both of which die after providing, by the production of *fertile ova*, for the continuance of their race. Many naturalists have also observed that the species of *Solenobia*, one of the *Tineidae*, have a most exceptional power of reproduction. The maiden females of the genus lay eggs which can be hatched so as to produce larvæ, and a naturalist may breed a species for years without seeing a male *Solenobia*. This extraordinary fact is not without parallel amongst the *Lepidoptera* "and others."

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to "The EDITORS of the 'British Bee Journal,' 17, *King William-street, Strand, London, W.C.*" *All business communications relating to Advertisements, &c., must be addressed to* "THE MANAGER, 'British Bee Journal' *Office*, 17, *King William-street, Strand, London. W.C.*"

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

PACKING SECTIONS FOR MARKET.

[3607.] Your correspondent "H. Patey," in his letter in the B.B.J. of February 16 (3593, p. 64), asked for the opinion of bee-keepers as to the need of a light packing-box to hold half-a-dozen sections. I see that in this week's journal no reply has been made to this request. I believe that a year or two back I made the same suggestion in your columns; but, as far as I am aware, there was no result. I should like, therefore, to express my agreement with your correspondent that such a box would be useful to many bee-keepers if it could be procured at a reasonable price. It should, of course, be made of some light but sufficiently strong material, so that it could be

sent either by rail or parcel post; which method of travelling would test its capabilities more severely it is difficult to say. Bee-keepers who live at a distance from a railway station, but have the ordinary postal facilities, would find such a box an advantage, while it would also be useful to those who are more fortunately situated. I am inclined to think also that light boxes, to hold half-a-dozen 1-lb. jars would also meet with a ready sale. It is not always easy to lay one's hand upon a small box of the necessary dimensions for holding a few jars, and to make such a box involves time and labour, which some busy bee-keepers may not be able or willing to spare. If it were possible to have a box suitable for holding either sections or jars, as required, so much the better. I hope this matter will not be allowed to drop.—E. CHARLEY, *Hon. Sec. Cheshire B.K.A., Ince, Chester.*

WAX EXTRACTING.

[3608.] On receiving vol. xxvi. of B.B.J. from the binder, I spent the same evening in examining its contents, and found to my surprise that I had overlooked p. 214, where our mutual friend, Mr. Robert Peebles, and his apiary are so charmingly portrayed; just my own idea, too, the "W.B.C." hive in preference. I really must apologise to him, and can assure "R. P." that any remarks of mine on wax extracting was dictated by a sincere desire to enable any "oppressed bee-keeper," independent of "Rosemary" or kail-house boiler, to render his wax. I am not a skilled mechanic, but I can make my own bee-hives, &c., so far as nailing-up. I, for one, tender thanks to Mr. Peebles for his detailed sketch of the "W.B.C." hive. I prefer that arrangement to any other, but I adopt a "Cowan" stand instead of a framed one, as no weeds can flourish beneath. I notice among the pictorial representations of the "Homes of the Honey Bee" few, very few, are of our special pattern, almost all have the frame stand, with the objectionable splayed legs, either as a fixture to the body-box or as a movable stand.

The sketch of wax-extractor on p. 94 I submit to the skilled mechanic with the injunction, "just do as ye ken best" with it. I have rendered pure wax from scraps lying uncared for in a garden tool-house for many months, producing wax of superfine quality without artificial heat. There is no mess, no trouble, and no waste of wax by having to scrape the underside of the cake to remove the debris produced by rendering wax in water containing lime carbonate in solution.

I should think no referring to vol. xxiv. of B.B.J., 1896 (p. 33), is again requisite.

The aroma so noticeable in wax made under the old process is, no doubt, due to the maceration of the pollen or bee-bread stored in the combs for food. A solar wax-extractor does not act upon matter that will not liquify by heat, consequently they are left with the pupa skins as debris, to be afterwards removed.

I conclude by recommending all in the craft to make a trial of a similar cheap and efficient solar wax-extractor, and to all "oppressed" brethren a speedy relief from sticky and messy annoyances. A few of these fall to my own share, too; I do not escape them; for, indeed, I am sore troubled just now, having to shift my bees to make room for a roadway and buildings over the site. But, thanks to the present frost, and also to the disappointments consequent upon getting a new site for our hobby, one must be "canny," as I find that by waiting and persevering the best will turn up at last.—AULD REEKIE, *Hants, March* 6.

NOTES FROM SOUTH BUCKS.

[3609.] The weather of the last fortnight has been all that could be desired, from a bee-keeper's point of view, and the bees have been busy on the crocuses during the midday hours. Breeding, too, I have no doubt by the movement of the bees, is now started in earnest. I think, therefore, that bee-keepers who have hives with insufficient covering should put on more quilts at once to help the bees in keeping the temperature inside hives up to a proper height. I always consider the end of March or beginning of April quite early enough to overhaul or examine the frames, and until then I content myself with seeing that none runs short of stores. The busy time having now commenced, we bee-keepers can put in many hours of overtime by way of preparing for the coming season, which we all hope may be a good one.

I have just received the schedule of the "Royal Counties" Show to be held at Windsor early in June; and I advise all those bee-keepers who take an interest in exhibiting to get a copy, for there are classes to suit every one, with liberal prizes, too. Bee-keepers who have good honey of last year on hand will be doing well for themselves by keeping it for this meeting.—G. SAWYER, *Marlow.*

NON-SWARMING HIVES.

[3610.] In your issue of January 12 last a querist (2143, p. 18) asked for your experiences of "Simmins' non-swarming system." May I say that for two years I have followed out the principles set forth in Mr. Simmins' "Modern Bee Farm" with perfect success and excellent results. Last year only one of my twenty-five box-hives swarmed. The swarm was returned the same evening, and was kind enough to remain at home with its sisters, and produce splendid results—in quantity at least, though, alas! not in colour.

I took advantage of the fine days about February 18 to give back to all my bees some of the black concoction they gathered last

year, and shall be greatly pleased if they will manage to finish it all off before supering time for '99 comes. Yesterday (March 3) I took round some more of it, and found that all stocks but one had finished what I gave them a fortnight ago, while one colony was absolutely asking for more room by clustering, as for building comb, in the feeder! I generally recognise this clustering as their way of saying that if I give them a super they will occupy the same; but it seldom occurs in my apiary earlier than about April 15. Of course I shall insert another comb as soon as possible.

The feeders (tin troughs) were all licked perfectly clean, but some soup-platesful which I gave outside in the open about a week earlier showed a granulated residuum looking very like coarse brown sugar. I saved a portion, and am sending it on to you in a bottle. Perhaps some of your scientific friends may discourse learnedly about it as to whether it is dextrose or levulose, as well as *lachrymose!* A sample of the blackest honey of all, taken in August, showed, when last examined, a film of very black stuff at the top about $\frac{1}{16}$ in. thick, the rest having changed to a very dark brown. I unfortunately sent that away, or you should have had a sample. It had been exposed to the light for six months. Some other bottles which have been in a cupboard do not look quite the same. It is all very hard and solid at present.

All my colonies appear thus far to have wintered exceedingly well. There was no temptation to cut short their supplies in the autumn.—C. C. J., *Wortham Rectory, Diss, March* 4.

[1. The non-swarming principle referred to was fully described and illustrated in our columns by Mr. Simmins himself (Vol. 23, page 506), so that readers are not unconversant with the plan. 2. The sample of granulated honey sent appears quite normal, but bottle was smashed to atoms through insecure packing; the "residuum" being simply the larger granules which needed moisture before bees could consume them.—EDS.]

HELPING ASSOCIATIONS.

[3611.] I was pleased to learn from the account of the Devon B.K.A. meeting on page 71, that we have an association in Devon, but unfortunately the address of the Hon. Sec. does not appear in the report. I would like to call attention to the fact that in the little town of Bampton and neighbourhood there are a few bee-keepers who own from 100 to 200 hives, and I think if the attention of the Association was called here it would mean a considerable number of members added to their list. If either the expert or the Hon. Sec. would like to come to Bampton with this object in view, I am certain either would meet with the heartiest reception, and I would be glad to take either of them round to bee-keepers myself. Having moved from Somerset here, and being formerly a member of S. and S.G. Association, I am anxious to join the Devon B.K.A., and with myself to try and get others to do the same. I may say also your B.B.J. is not known here very much as yet, and I think myself it is the best help to all concerned in bee-keeping.

I thank you in all heartiness for the help it has given me, and wishing all brother bee-keepers success.—WM. DINHAM, *Bampton, Devon, March* 2.

[The address of the Hon. Sec. is:—Mr. H. Tolson, Park House, St. Thomas, Exeter.—EDS.]

A NOTE FROM DEVON.

[3612.] As I do not see many contributions from Devonshire in your valuable journal, I thought a note of my bee doings for 1898 might possess a little interest for some of your numerous readers. My spring count for the season was seventeen frame hives and one skep, the latter being kept for the sake of swarms. I have, however, kept bees long enough to find that I get as many swarms as I require from the frame-hives, so I have now done with skeps altogether. I got eight swarms from the frame hives, four of which issued on July 8, it being a very hot day. I have three "Wells" hives, but after several years trial I fail to see the advantage of working on the double-queen system. I have taken any amount of trouble to give them a fair trial, but the most I ever got from the best of the three "Wells" hives in one season was 111 lb. extracted honey. On the other hand I took last summer from a single-queen ten-frame hive 160 lb. of extracted honey. From another and similar hive I got six racks of full sections and one box of eight shallow-frames.

On June 9 I had a swarm weighing 8½ lb. from a hive headed by a hybrid queen, purchased from Mr. H. W. Brice. I moved the swarm on six frames of foundation and four built-out combs (nothing pays like full sheets to my mind), and got from it three racks of finished sections besides a box of shallow-frames worked on top and four well-filled shallow-frames from the front of entrance. The hive, I should explain, was one of Trebble's non-swarming hives with the non-swarming box holding four shallow frames in front. This same hive was, I believe, exhibited at the "Royal" last year, and was spoken very highly of in the BEE JOURNAL at the time. I work for sections and for extracted honey, having a demand for both. I took first prize for extracted and second for sections last year at our local Horticultural Society's show. My "take" for the year '98 was 623 lb. extracted honey and 690 1-lb. sections, total 1,313 lb. I do not count partly-filled sections, as we use these in the house, and I give a good many such away.

Nearly all my honey being sold I have not much cause to complain of '98 as a bad season, besides grumbling never helps matters, but when bad seasons come I comfort myself with the thought, "That it's better times in front of us." I am happy in not having been troubled with honey-dew, only getting six dark sections for the whole year, and strange to say these were in the centre of the rack from which I took my prize sections. I look after a good many people's bees beside my own (fifty to sixty hives), and I took off several dozen very dark sections not more than five miles from here, so I was very lucky myself. I also got 22 lb. of wax, which I extracted from all my old combs, scraps, and cappings in the extractor, which I described in BEE JOURNAL about twelve months ago. The work is all done without a bit of mess and very little trouble. I have had no trouble in disposing of my honey, and, as stated above, I have very little left on hand, just enough for my regular customers, all being sold at a fair price. I have kept bees for about eighteen or twenty years, and after deducting all expenses, down to a penny postage-stamp, I have always been on the right side, with a balance to the good. Last year I had an extracting house put up, which cost nearly £8, also a cupboard for storing honey at a cost of about £3, all paid for by the bees, and a balance left, to the bargain. So I unhesitatingly say bees kept and looked after in a proper manner pay, and pay well. Regarding the low price of honey spoken of by some of your correspondents, and its causes, well, I may say I have the same thing to battle with, as the price is not what it used to be, neither do I think it ought to be, as it was not many years since that I used to sell sections at 2s. each, and 1s. 6d. was thought to be a very low price, but none of the working class could buy at that price, and therefore the demand was not near as great; but now, since prices are come down the demand has very much increased, and I find it pays better to cater for the many than it used to do for the few.

We have several gentlemen bee-keepers just around here, who sell their produce for just anything they can get, and the cottager, unless he can produce his honey to put on the market by the hundredweight, has trouble to dispose even of his few sections or bottles, as the case may be. A gentleman offered me over 100 sections last summer if I would take them at 6d. each, all real good sections, but I declined to have anything to do with them, although I bought many dozen from cottagers and disposed of them. I think if gentlemen go in for bee-keeping they could find plenty of poor people who cannot afford to buy honey even at the present prices, among whom they may distribute their surplus stock after their own requirements are supplied and not put it on the market at a low price. and so block the same against the working man bee-keeper, who is trying to add a little extra to his scanty wage; at least, that is my opinion, but we shall never see "eye to eye," I guess.—A. DELBRIDGE, *Parracombe, Barnstaple, Devon.*

BEES AND LAUNDRESSES.

[3613.] I am a constant reader of the B.B.J., and I have, so far, never read of any bee-keeper having been troubled by coming into contact with a laundress! I have kept seventeen stocks of bees within about 15 yds. from my own house for the last four years, and no complaint of any kind has previously been made against me for so doing. My dwelling house is about 100 yds. from that of my nearest neighbour, and I have never heard of any one being stung by my bees, as I am always most careful in manipulating. The question I want to ask you is:—When the laundress above referred to hangs out clothes on her lines, can any one prove that it is the bees that spot the said clothes all over with their excreta? And am I amenable to the law's penalties for keeping bees under circumstances detailed above? I am led to put the question because this laundress has requested her landlord to take steps to compel me to get rid of my hives, and he has, so I am told, put it into the hands of a solicitor. On the other hand, if the law makes me move my bees, can I claim compensation if I have to sell at, perhaps, half their value because of a forced sale? I shall be glad to get your advice as to what steps I had better take if I hear any more about it.—W. J. WORMAN, *Bridport, February* 27.

[You had better wait further developments before being alarmed at the threat of legal proceedings. Besides, it would be very difficult to prove a case against you, and any solicitor will know that.—EDS.]

REMOVING BEES FROM TREE IN FEBRUARY.

[3614.] It may interest your readers to know that a swarm that I lost last year—by its flying off and taking possession of an old oak tree—was successfully removed three days ago (February 21) by a friend and myself. The day was warm, and with a cross-cut saw we cut down the tree, a limb breaking off just where the bees had located themselves. We cut off the bees and combs in a solid block, of a proper size to form a rustic hive, and, standing this right way up, left it till 5 p.m., when we carried it home, a good half mile away. It seems a good strong stock and should, by its weight, have over a score of pounds of honey in store. The bees had a nice flight today, and, as I think the queen is safe, I am hoping to get a swarm from it. As a keen lover of bees I think you will agree that this was better than destroying the colony. I have wintered eighteen stocks, so now possess nineteen, and am looking for a good season.—W. D., *Helmsley, Yorkshire.*

"OUR WILD BEES."

(*Concluded from page* 83.)

I want now to notice a group of bees that, in a systematic classification, would come right at the beginning of the wild bees, that is, farthest removed from the honey bee. They belong to the genus *Prosopis*, and a beginner would hardly take them to be bees, so "un-bee-like" is their general appearance. They are small, bare, shining, black insects with a few pale yellowish markings about the face and legs. They make their nests in dead bramble stems, forming their burrows in the soft inside pith, and they generally begin burrowing from an end where the stem has been cut or broken off. It is not easy to think of a warmer, dryer, and more snug home for her young than that chosen by the female *Prosopis* in the centre of such a soft substance as pith, and so well protected by the hard thorny outside tube of the stem. The nest is provisioned with a compound of honey and pollen, which is mixed in the body of the bee, she being provided with no pollen brush on her legs for carrying this substance home separately. Her tongue, too, is short and bifid, not long and pointed as in the honey bee, so she cannot get at the honey in flowers with long corollas like clover, &c. This disadvantage is, however, partly made up for by her small size. We thus see what a primitive kind of bee the *Prosopis* is. The sketch below will convey a better idea of a *Prosopis* than would a written description. It represents *Prosopis hyalinata* ♀, one of the common species. The line at the side shows the actual size. This species is particularly fond of blackberry bloom. Another larger species (*P. signata*) may often be met with on the flowers of the wild mignonette.

The genus *Colletes* has a similar tongue structure to *Prosopis*, but it is much more like the typical bee in general appearance. One species of *Colletes*, indeed, *C. cunicularia* (which has already been mentioned as occurring on willow bloom in the early spring), has such a strong resemblance to a honey bee that it has often been mistaken for one. The other species, of which we have five in this country, all occur in August, and are a good deal smaller than *C. cunicularia*. They are most plentiful on dry heaths, and have, therefore, received the name of "heath bees." Several of the species show a partiality to chamomile flowers. The females make their burrows in the ground.

This brings us to the end of our common wild bees, which, taken on the whole, are a remarkably interesting group, not, indeed, for the most part, very gaily coloured, but well endowed with highly developed instincts, which are rendered apparent by the very diverse and interesting habits that they possess. I venture to think that every bee-keeper would find much pleasure and profit in noticing them and their ways during the coming season. There is no need to go in for them very scientifically at first. If you have no time to do more than just catch and pin those that come across your path, do not trouble about setting the specimens, but endeavour if possible to make a note of where they were and what they were doing when you captured them, and you will be surprised what interest and pleasure they will soon awaken in you. At first it will be unnecessary to make long rambles in searching for the rarer kinds. The bloom on the peach trees and gooseberry and currant bushes that grow in your own garden cannot fail to attract them by hundreds, and these, followed by the apple, and pear, and raspberry blossoms, and herbs such as mint and thyme, make a succession of different allurements which will continue, almost without break, right on into the dull month of November, when the ivy blossom makes the crumbling old wall echo for the last time with the cheery hum of active bee-life—each and all bringing an ever-changing stream of wonderful insect visitors to your very doors, with which it will be worth while to pick up some sort of acquaintance, if it be only for the purpose of giving yourself the pleasure of being able each year to welcome them to the fruit garden where they do you, free of charge, the kind service of fertilising the blossoms, thus helping to ensure a good crop of fruit.*—F. W. L. Sladen, *Ripple Court, Dover, February* 18.

METEOROLOGICAL

Observations taken at Duddington, Stamford, Northants, for the Week ending March 4, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Feb. 26....	30·36	27·0	45	22	23	33·5	—
,, 27....	30·44	30·5	44	21	23	32·5	—
,, 28....	30·56	32·8	50	21	29	35·5	—
Mar. 1....	30·54	41·3	55	32	23	43·2	—
,, 2....	30·41	38·9	51	30	21	40·2	—
,, 3....	30·17	35·0	44	30	14	36·8	—
,, 4....	29·82	35·8	44	31	13	37·3	—
Means	30·33	34·5	47·7	26·7	21·0	37·1	—*

* Total, Nil.

Mean vapour tension, 0·164 in.; mean relative humidity, 81 per cent.; mean temp. of the dew point, 29°·2. For the week ending February 25 the mean temp., viz., 40°·2, was + 1°·1, and the rainfall, viz., ·04 in., −·28 in. The mean temp., January 29 to February 25, viz., 40°·9, is +2°.4, and the rainfall, viz.,

* Those who are taking up the study of the wild bees are referred to the articles under the heading of "Our Wild Bees" that commenced about this time last year in B.B.J.—F. W. L. S.

1·84 in., +·18 in. The mean temp., January 1 to February 25, viz., 40°·6, is +3°·0, and the rainfall, viz., 4·20 in., +·75 in.

Results of Meteorological Observations for February, 1899.

Barometer.

Highest, 30·56 in., on the 28th.
Lowest, 29·10 in., on the 12th.
Range, 1·46 in.
Average height, 29·81 in.

Thermometers.

Highest Max. Shade Temp., 62 deg., on the 10th.
Lowest Max. Shade Temp., 35 deg., on the 5th.
Highest Min. Shade Temp., 48 deg., on the 11th.
Lowest Min. Shade Temp., 19 deg., on the 4th.
Range, 43 deg.
Greatest Daily Range, 27 deg., on the 23rd.
Least Daily Range, 3 deg., on the 20th.
Highest Shade Temp. at 9 a.m., 55·5 deg., on the 10th.
Lowest Shade Temp. at 9 a.m., 22 deg., on the 4th.
Highest Mean Daily Temp., 54·0 deg., on the 10th.
Lowest Mean Daily Temp., 27·5 deg., on the 4th.
Mean of Highest Daily Readings, 47·8 deg.
Mean of Lowest Daily Readings, 33·0 deg.
Mean of Daily Range of Temp., 14·8 deg.
Mean Temp. of the Month, 40·4 deg.
Mean of Dry Bulb (9 a.m.) Readings, 38·5 deg.
Number of Days Frost in Shade, 13.

Rainfall.

Number of days on which ·01 in. or more fell, 15.
Greatest Fall in 24 Hours, 0·46 in. (snow) on the 6th.
Total Fall in the Month, 1·63 in.
Total Fall, January 1 to February 28, 4·20 in.

The Mean Temp., viz., 40·7 deg., is +1·7 deg., and the Mean Temp. January 1 to February 28, viz., 40·1 deg., is +2·6 deg.

The Rainfall, viz., 1·63 in., is −·03 in., and the rainfall January 1 to February 28, viz., 4·20 in., is +·65 in.

FRED. COVENTRY.

Duddington, Stamford.

BEE-KEEPING IN IRELAND.

REPORT OF THE CONGESTED DISTRICTS BOARD.

The following extract—having reference to the assistance afforded in extending bee-keeping among small farmers and cottagers—affords a striking contrast to the niggardly way in which the bee industry is helped forward by the great majority of our County Councils on this side the Channel. With a few notable exceptions the grants in aid of technical instruction are applied to teaching bee-keeping with an altogether too chary a hand to yield any satisfactory results, and so, without desiring to see the need arise for any counterpart of the Congested Districts Board, we certainly congratulate our Irish brothers in the craft who, as small farmers and cottagers, are having such substantial aid afforded them as appears in the Report referred to, which reads as follows :—

BEE-KEEPING.

Good progress has been made in connection with our efforts to extend bee-keeping, and to improve the systems of bee-keeping practised by existing bee-keepers in the congested districts. Mr. Turlough B. O'Bryen has continued to act for us as an expert in this industry. One hundred and twenty-nine hives and outfits have been sold during the year, the greater portion having been distributed on the deferred payment system, which enables bee-keepers to dispose of one honey harvest before paying for the hive and outfit. We are pleased to state that most of those to whom hives and outfits have been supplied in former years are making steady progress, and that the instruction afforded by Mr. O'Bryen has produced good result. The arrangement for the disposal of honey, which was started last year, has been continued, and Sir Thomas Lipton's company has again purchased all the good section honey which was received for disposal from bee-keepers in the congested districts. Three thousand and two sections, and 431 pounds of extracted honey have thus been disposed of. The Board paid the producers £96 for this honey, and disposed of it for £109, but the necessary expenses, including crates, bottles, freights, &c., amounted to £30. During the year district associations of bee-keepers were formed at two or three places. We consider that such associations should prove very beneficial, especially in enabling local members to purchase necessary appliances, and to dispose of their produce on advantageous terms. We have therefore arranged to provide each such association with an extracting outfit free of charge for two years.

We regret to state that "foul brood" is still very prevalent in parts of Donegal and Kerry, although we are glad to learn that the preventive and curative treatment adopted last year by Mr. O'Bryen has been most successful. Recognising the serious loss to bee-keepers which would result from a spread of this very contagious disease, we authorised Mr. O'Bryen to confer with Dr. M'Weeney as to the most desirable methods to adopt for the disinfection of diseased stocks, and we also authorised him, whenever he considered it advisable and obtained the owner's consent, to completely destroy diseased stocks, with the hives that contained them, and to give an undertaking to replace all articles so destroyed at the cost of the Board, who would supply swarms of healthy bees in lieu of those destroyed. As a rule, owners of infected stock made no objection to those preventive measures, but in some cases they were unwilling to destroy their bees until the honey season expired, undertaking to do so as soon as the honey harvest had been secured. Such delays are not without considerable danger of the spread of foul brood to healthy stocks in the neighbourhood, but bee-keepers, especially those who are not fully aware of the great loss which would be eventually incurred if foul brood became prevalent in any district, can hardly be expected readily to consent to their bees being destroyed when they appear to be working satisfactorily. We understand that foul brood exists to a considerable extent in the non-congested districts in the eastern parts of Donegal, and bee-keepers have been warned not to procure swarms from that neighbourhood. In the Dingle district foul brood has recently spread through about forty apiaries, mainly owing to

the distribution of diseased stocks sold from one apiary, the owner of which had been informed that the bees were diseased. Having regard to the rapidity with which the disease is spread in a district in which there are many apiaries, we think it very desirable that some steps should be taken to ensure the speedy destruction of infected stocks as soon as the presence of the disease has been detected. To an exceptional extent during the past season honey has been rendered unfit for consumption or seriously depreciated in value by the presence of honey-dew. This evil is usually confined to districts in which trees are plentiful, as the honey-dew is obtained from the foliage of trees. The absence of trees in the congested districts is usually a matter of regret, but in this instance it has resulted in the season's output of honey having been remarkably good, as compared with that of districts in which trees abound. Honey-dew impairs the flavour of the honey and darkens the colour, sometimes making it as dark as porter.

Queries and Replies.

[2169.] *Transferring Bees.*—I shall be pleased if you can assist me with the following difficulty:—I have six hives of bees, No. 1 being a stock in a small box on old black combs; No. 2 is a May swarm of last year from No. 1—it also is in a square box; Nos. 3, 4, 5, and 6 are bees driven last autumn, each lot being on seven shallow-frames of comb. I am desirous of transferring all six stocks to standard frames about Easter, and working Nos. 2, 3, and 4 for sections this year and allowing Nos. 1, 5, and 6 to swarm. After No. 1 has swarmed I want the bees to make new combs, so I can gradually take away the old. 1. Do you think the above method of managing will work all right? 2. What material is best to use for tying combs in standard frames as I want it to last until the bees have fixed the combs? 3. Will Nos. 5 and 6 swarm if I take two combs of brood from each to give to Nos. 3 and 4 and feed them a bit to help make up for loss, and keep them in rather close quarters at swarming season?—Allen, *Ipswich.*

Reply.—1. Success will depend entirely upon management. As to transferring the stocks at Easter, it may be done if the weather is settled and warm enough, but if nights are frosty and days cold the brood will run much risk of being "chilled," and so perish. 2. Very narrow tape answers this purpose well. 3. If you transfer Nos. 5 and 6 at Easter, and afterwards remove two frames of comb from each, replacing with empty combs or with foundation, it will certainly retard swarming. The weather at the time is also an element that has much to do with the advisability or otherwise of such bee operations as those in question, and at present we cannot even guess what this is likely to be a month or two hence.

[2170.] *Protecting Hives from Interference.*—1. Is there any way of securing a hive by some means of fastening up with key to prevent interference from strangers? I am wanting to place a stock of bees out in country and the ground is not walled in from the road. Hence my inquiry. 2. I would like to ask is this about the season for removing hives? 3. Would you advise me to use a swarm catcher to prevent loss of swarms when wanted? Perhaps some reader with knowledge of placing hives out might kindly give information.—C. D., *Strood, Rochester, February* 28.

Reply.—1. There is no way of locking hives up. The roof and lift, however, may be fixed with a thumbscrew, or even a common screw, one on each side. We have known an out-apiary in the open for seven years now, and have never heard of the bees being interfered with. 2. Bees may be safely moved at end of present month. 3. Swarm appliances are very useful in out-apiaries.

[2171.] *A Novice's Queries.*—I am only a novice at bee-keeping, who by travelling about became possessed of a great desire to keep bees, they seemed to be so very interesting. A neighbour promised me a swarm if I would get a hive to put the bees in; but the swarm never came off, though my hive did, for I set to work and made a hive to take twelve standard frames. This hive remained bee-less till August, 1896, when I had a driven lot of bees given me. These were hived, and a week later a second lot added to them. I gave the bees 33 lb. of sugar in syrup that year. They swarmed in June, '97, and I sold the swarm, for 4s. I also took 20 lb. of splendid honey from them. Last year I got 40 lb. of dark honey from same hive. Last September I drove the bees of two skeps, putting both lots together in a frame-hive, and giving them 24 lb. of sugar. The bees seem to have wintered safely, and to-day they are carrying in pollen. I have given a cake of soft candy, and after giving another it will be time to give them syrup instead. 1. Would that be a proper course? I bought a frame-hive containing a fair number of bees last September for 10s., but a fortnight ago I noticed numbers of drones flying from this hive, and they seem to increase. This caused me to think the queen was old and worn out, or else she must have died after the drones were killed off last season, and the bees have raised another queen, which is still unfertilised. 2. Do you think this is so? And if so, what am I to do in this case? I thought of killing this queen, and giving the bees a frame of brood from another hive. 3. Would that plan succeed? 4. When would be the best time to do it, now or in April? I thought working No. 1 with sections this year, Nos. 2 and 3 for extracted honey, as I can sell a good

lot of run honey in 1-lb. jars.—NOVICE, *Tamworth, March 3.*

REPLY.—1. Yes; quite proper. 2. If drones are being reared at this season one of the two evils you name is certain. 3. We cannot guarantee success, but the plan should be tried. 4. April is quite early enough for queen-rearing.

[2172.] *Swarming Appliance.*—I shall be away when my bees ought to swarm, and so I ask:—Could I put a queen trap over the hive entrance, to catch the swarm, or rather the queen, so as to prevent loss, as last year I lost several swarms? (1) If a swarm issued and the queen was caught in trap, would the bees return to the hive or cluster on the queen-trap? I see swarm-catchers advertised, but fear they are too expensive. I should be glad of help, and all information as to how to treat the queen when in trap; length of time she may be left there, &c. (2) Would you advise putting queen excluder over the entrance all the summer, and occasionally letting out the drones? Why is this plan never adopted? It surely would save swarming. (3) Should shallow frames for honey have full sheets, or only strips of foundation?—"MELILOTUS."

REPLY.—(1) A well made swarming appliance may be used, but it would require looking after occasionally during the season, as in the event of the old queen's death in her efforts to get free, virgins are often able to pass through the excluder zinc and a loss of the swarm thus ensues. The bees, on the issuing of a prime swarm, would return and cluster on the appliance, and remain there probably for days, or even a week, and if no one was there at the end of that time, to put matters straight, complications might arise. The appliance could remain on the whole season, provided the egress and ingress is kept free from dead drones and débris. (2) Queen excluder zinc by itself will not answer the purpose. (3) This is a matter of individual taste. If honey is coming in fast we advise full sheets as most economical.

GOOD MANAGEMENT OR MANY COLONIES—WHICH?

Question.—I commenced in the bee business two years ago, starting with four colonies, and I now have sixteen. I had intended to increase up to about fifty colonies, and work these carefully and as thoroughly as I was capable of doing, thinking that fifty well worked would be better than more not so well cared for; but in talking with a man a few days ago he advised me to increase to 100 or 150, he claiming that such a number would secure for me better results, with less labour, than would the fifty worked as I proposed. He said the extra labour I would expend on the bees, working as I proposed, would more than buy the extra hives needed, while I would secure more honey in the end by keeping the larger number of colonies. What do you think in that matter? I wish to do that which will secure to me the best results for my labour.

Answer.—There is an idea prevailing with some bee-keepers that more money is to be made by keeping a large number of colonies and allowing the bees in a great measure to take care of themselves than there is by keeping a less number of colonies and properly caring for them. Not long ago I received a letter bearing on this subject, which is right to the point here, being from an apiarist of considerable experience, who said that he was going to keep more bees than he had formerly done, and do less work with them, for he believed that double the number of colonies would give him fully as much honey as he had been getting (if not more), even if he did not manipulate them at all. He said that he believed the system of management used by many in securing large yields from individual colonies caused a greater amount of labour and manipulation than there was any use of, and henceforth he would adopt exactly the reverse of the plans he had formerly used, and put more bees into his field, so that he might secure the same amount of surplus as before, with very little labour. All that would be required would be the investing of a little more capital in the shape of hives, &c., and that the "good management" plan would soon be something known only as past history. Without trying to give his words exactly, I have given the substance of the letter. As this came from a person in whom I had much confidence, and as I was using the management plan, and have been recommending as likely to secure the best results, it was but becoming in me to consider the matter a little; because, if I was on the wrong track, it would be better to put myself right, and that speedily, especially as my words might influence others in the wrong direction. After carefully considering the matter, it did seem to me that there was one very important item regarding these extra colonies which the advocates of it entirely overlooked, which is great enough to more than pay for the manipulation, so that the investing of capital in more hives for the extra number to be kept is worse than thrown away. The item I allude to is that each of the extra colonies put in the field in order to secure the honey from a given area with but little or no manipulation costs from 60 lb. to 75 lb. of honey each year to support. Some apiarists who have studied closely claim that no good colony can exist a year without consuming fully 100 lb. of honey; but that it may not appear that there is a desire on my part to overdraw the matter we will place the amount needed to carry any good colony through a year at 60 lb. The question then comes to us, "Which is cheaper—a little extra manipulation, or the extra colonies, hives, &c., and the honey which they consume?" Suppose that 100 colonies yield an

average of 50 lb. each, and by so doing secure all the nectar in a field year by year. This would make 5,000 lb. of surplus as our share of the field, while each of the 100 colonies will require 60 lb., or 6,000 lb. as a whole, as their share to carry them through the year. Thus we fail to secure to ourselves one-half of the honey from our field by employing an extra number of colonies. On the other hand, if we employ the management (or economy) plan, which our English friends do, that of making, by thorough fertilisation and careful tillage, one acre of ground produce from 50 to 60 bushels of wheat to where we Americans produce only from 20 to 30 bushels, we shall find our statement thus :—Eleven thousand pounds is the product of our field ; fifty colonies are all that are needed, with good management, to secure it. Then fifty colonies must use 3,000 lb. of this for their support, leaving 8,000 lb. for the manager. Thus it will be seen that the manager can appropriate to himself 3,000 lb. of honey for his manipulation, and use little, if any, more time than he would use on the hundred without manipulation ; hence, from the standpoint of overstocking a field, the management plan is 3,000 lb. ahead of the plan of keeping an extra number of colonies. At the present low prices of honey this, at ten cents per pound, would amount to $300 as the price of the extra manipulation, should it be proven that such was required, besides the saving of the capital, and interest on the same, which would be invested on the extra hives. I am firm in the opinion that there are many men in this country who do not receive a greater amount than that for a whole year's manipulation (work) in the coal mines and other places. And this same thing holds good, be the number of colonies kept great or small. A man can care for half the number of colonies on the management plan as easily as he can for double the number as proposed by my correspondent, and suggested by the adviser of the questioner, and this half will give the apiarist as good results in dollars and cents as will the whole when cared for in a slipshod way, and save the extra honey consumed by the extra half of the number of bees, as clear gain to the bee-keeper. Thirty years of bee-keeping life tells me that this is not mere fancy, but facts which the success of the two plans proves, as will also be obvious to all who have closely watched the reports in our various bee-papers during the past. If any reader, or the questioner, has any doubts along this line, let him try the two plans side by side till he is convinced. With the low prices of honey seems to have come the idea of going back to the old idea that "bees work for nothing, and board themselves," and so many bee-keepers seem to think that all that should be required of them may be summed up in the old saying of "hold the dish to catch the porridge." To the truly enthusiastic bee-keeper there is no fun in such a plan as this. Pleasure comes only through a love of our pursuit ; and if we love it we are always interested enough to make the labour fun while we are doing it. Did any one ever have any fun going fishing and get it by swinging in a hammock in the shade ? Did any one ever enjoy himself in the fox-chase while sitting beside the sitting-room fire ? The love of fishing and of the fox-chase is greater than that for hammock and fire, and so the love for work with the bees must be greater than the love for ease if we would succeed in our pursuit.—G. M. Doolittle in *Gleanings* (American).

Bee Shows to Come.

June 5 to 8 at Windsor.—Bee and Honey Show in connection with the Royal Counties Agricultural Society. Several classes for past season's honey. Schedules from A. D. Woodley, Hon. Sec. Berks B.K.A., 17, Market-place, Reading.

June 9 and 10 at Epping.—Show of Bees, Honey, and Appliances in connection with the Essex Agricultural Society. Schedules from W. J. Sheppard, Hon. Sec. Essex B.K.A., Chingford. **Entries close May 17.**

June 19 to 23 at Maidstone.—"Royal" Agricultural Society's Show. Bee and Honey Section under management of the B.B.K.A. Schedules from E. H. Young, Sec. B.B.K.A., 12, Hanover-square, London, W. **Entries close May 1.**

September 6 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 30.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

J. C. (Tring).—*Suspected Comb.*—Comb sent is affected with foul brood. It is a matter for much regret that the hive was not examined immedately on the "robbing" being noticed. The mischief is now possibly conveyed to other stocks.

P. F. Oliver (Basingstoke).—*Bees Dying.*—The signs you name are indications of dysentery, but the bees in comb sent favour the notion that they have lost vitality through paucity of numbers and cold. There is nothing worse than wholesome pollen in cells and no indication of brood. The hive should be washed out with solution No. 10 on p. 164 of "Guide Book."

H. Graystone (Wickham Market).—*Uniting Stocks.*—Reduce the bees of both stocks to the condition of a swarm ; then unite as directed in "Guide Book," p. 105. Remove one of the queens (the best) before joining the bees together.

E. E. H. (Essex).—*Are Bees a Nuisance?*—Judging from all the circumstances of the case, as detailed, we do not think your neighbour will carry out his threat of legal proceedings, and it is probable the idea is to alarm you into compliance with his wishes. If your bees are kept so far from your neighbour's dwelling, it would be very difficult indeed to prove either danger or nuisance, while causing "alarm" only is not a legal offence.

Editorial, Notices, &c.

Obituary.

HERBERT J. SANDS.

("LORDSWOOD.")

The brief announcement made in this column last week of the unexpected death at an early age of our contributor and dear friend Herbert J. Sands recorded the passing away from among us of a notable figure in the bee-world. In him there has—alas, all too soon—dropped out of the little band of our regular—and we are pleased to add, voluntary—contributors one whose pen had so large a share in making the BRITISH BEE JOURNAL interesting and useful to its readers. But "Lordswood" occupied a unique place among our correspondents. The delightful word-pictures from his pen, descriptive of all that is beautiful in nature, concerning plants, and flowers, and trees, were peculiarly his own. Moreover, his knowledge of the subjects he loved to dwell upon was so varied and reliable as falls to few men to possess. But he was withal of so shy and retiring a disposition, so averse to publicity for himself, that we are more than pleased to have the opportunity—now that these things will trouble him no more—of placing before our readers another and none the less pleasing side of a character that was in a very high degree lovable to one who, like the writer, had the privilege of freely corresponding with him, even while unaware of ever having seen him.

Since our note last week letters have reached this office full of sorrowful sympathy for those nearest to our friend, and contain, also, various suggestions regarding "Lordswood." It would, to our mind, be a little out of place to publish them, and so we may be allowed to express the thanks of those concerned for the kindly feeling which prompted all that has been said. It may be well, however, to mention the suggestion of a member of the Council of the B.B.K.A., that we should collate the contributions of "Lordswood" to the *B.B.J.* and publish them in book form.

This well-meant proposal would no doubt be pleasing to two or three hundreds of admirers of our dear friend; but we are so thoroughly convinced that he would have set his face firmly against such a proposal, that we trust to be pardoned for respecting the views of him who is gone. Nor do we doubt being able to make this point clear later on.

Our space is too limited for dealing with the subject as we could wish in a single issue, because of hoping to present to readers a side of "Lordswood's" character somewhat different—though not less interesting—to what appears in his written contributions.

He had, as is well known to those who have perused his papers, a quiet vein of dry humour that was very pleasant reading, but he also held strong views regarding the world and the "worldliness" of most dwellers therein—views which found expression in quaintly humorous—but forcible withal—correspondence with the few who shared his confidence, and among whom it was our privilege to be included. Some of these letters are well worth putting into permanent form, and with this object we purpose inserting a few without unduly lengthening this notice. They will help to illustrate the character of our friend in words of his own, written off-hand and never supposed to be seen in print.

So far as our direct personal intercourse with Mr. Sands, it was limited to three or four days of the "Royal" Show at Birmingham in 1897, one of which was spent—along with our senior, Mr. Cowan—at Rednal Cottage, his charming little country house in Worcestershire. But we first met with him on the show ground, in accordance with the promise recorded on page 192 of B.J., May, 1897.

Our intention to print a few of our friend's letters does not occur to us now for the first time, there being a precedent on page 57 of last year's B.J., a reference to which will show his unwillingness to have any undue prominence for himself in print, and also help to illustrate our "point" with regard to publishing his writings in "book form"; for the next post brought in the following characteristic letters, with which we close this first portion of our sketch of "Lordswood":—

"Rednal Cottage,
"February 17, 1898.

"Dear Mr. Carr,—

"Supposing that I exhaust the subject of bees and flowers in a year or two and cannot find another line in my head to write; how about 'never doing that again,' *i.e.*, paying my subscription for the B.B.J.?

"It is very good of you to say it, but do you know it isn't business-like! I shall never hear of you presenting parks to your native town to air the inhabitants, or baths to cleanse them, or museums for the storage of things 'for the moths [and rust to corrupt,' as I hear Sir George Newnes is doing. But, never mind; perhaps old Britain has to-day more chests of drawers and other lumber in her ancient castle than the servants can keep well dusted. By George! the windows that want cleaning now, even in this nineteenth century.

"Do not forget that the 'Royal' Show is coming here, and some bee-keepers may want to interview 'Lordswood' (there is no Ladywood), so I want to impress on you the necessity to 'keep it dark,' as the boys say, for I desire very greatly to remain *incognito*. Do you know that this obscurity is the secret that enables me to write even as I do? If I were known and had to say to myself, 'Here, you mustn't write *that*, or you will have Colonel James Lefroy Fitzmaurice chaffing you; or some of your relations making sarcastic remarks about business people having their

heads full of all sorts of rubbish nowadays.' Just another thing I may mention ; don't base you joy on the seeing of me, please! Didn't some one who knows me tell you I couldn't say 'bo to a goose'? This is a slip if you like. How can I get out of the mess except by saying that I do not intend trying it on you, because you are *not* a goose (at present)? But you will be if you think you are going to get much water out of my well, because, sad to confess, it is nearly dry already.

"I send you a few early flowers by to-night's post, which I hope will reach you safely, and that they will give you as much pleasure in looking them over as they have me in the gathering. These early harbingers of spring are not made for gathering, being short of stem, but they are wonderfully characteristic of the season ; don't you think so? Children of misty rain and wet, cool, gleamy suns, and earth saturated with moisture. The crocuses will open best if you keep them very cool and then suddenly take them into a warm, lighted room. Or set them in tepid water where they will feel the warmth of the fire. A few of the snowdrops are 'fine and large,' if that be an advantage in snowdrops, which I much doubt. They are *Galanthus robustus* ; our ordinary common snowdrops are *Galanthus nivalis* (the milk flower of spring). I have some dozen varieties of this sweetest of all early blossoms. The crocus (species) are ethereal, too delicate for this rude climate (they come from sunnier skies than ours). The fates have been kind to them this time. The dog's-tooth violets were collected on the shores of the Mediterranean. The few chionodoxas (snow-glories) are from mountains of Asia Minor.

"All these flowers I have sent samples of grow freely under my care, so you see it would be easy to find the bees something to do even thus early if one were to persevere in dividing and seed - sowing. Unfortunately, under present *civilised* conditions of life, if I were to stay away from business to see to these matters a few days occasionally, my friends would prophesy for me a bad end, *i.e.*, a ragged coat to my back and no money in the bank to leave to them! I should not care how much they were to prophesy, if they would keep it to themselves, but Mrs. Jones mentions it to Mrs. Smith, and Mrs. Smith hands it over to Mrs. Robinson, and so on. I shouldn't care even then, only I am present earning a living by keeping up a speaking acquaintance with the above ladies, and there is a good deal of truth in the old saying, 'Give a dog a bad name and hang him.'

"So steeped and saturated in business and money-making have the Birmingham people been for centuries, that I believe they would sooner forgive a man for getting drunk occasionally, or being dishonest, than for losing opportunities of making money!

"Money is everything. If you take a large residence and keep servants and governesses and footmen and carriages, make a good show and have a good balance at the bank,' then, says Mr. Fitzhardinge Brown, 'I will make your acquaintance, for I have daughters, and you are but young,' and—as the Persians say—'who knows what is written in our destiny?'"

"But," he continues, "so long as you elect to remain plain 'Lordswood,' and even show alarming tendencies to reduce the number of chests of drawers your father so nobly and energetically collected together, and not only so, but even hint—oh, horror!—at going into a smaller house ; and, besides this, show a plebeian leaning towards the cultivation of your own flowers and bees, when there are so many gardeners with fingers and thumbs specially designed by Providence for this laborious work, flower-growing ; and as for bee-keeping! is there not an association who, for the payment of a modest sum will send a man round to manage the bees for you? So long as you act thus, young man, I really cannot have any communication with you. What would my wife say if I were to encourage a young man who says, 'That as for riding he desires none of it, but is thinking out a plan of a machine to reduce the speed of walking, so that one may have time to examine the moss on the old walls, the algæ on the trees, and ascomycetes everywhere?' And who says, further, that, as for my wines of the vintage of 1840, he can't bear the smell of them even. Never cared for the taste of anything liquid, except water! Doesn't even like my cigars. Says they smell awful! and that he never fancied burning anything except grass and 'squitch' and groundsel, and *that* unhappily obscures the sun for moments.

"His mother, too, tells me that she has a difficulty in persuading him to change his shirts and collars every week! He says that on a Saturday they are just getting to fit nicely and feel comfortable! And as for pleasing him by cooking joints of all manner of meat, it is impossible! Says, 'why can't we live on beans and lentils and dates like the Egyptians and other heathens?' Says he has seen the lambs slaughtered and doesn't like the look of their eyes when the knife touches their hearts! Fancies that perhaps they may in time develop more brains and lead *us* in and plunge the knife in *our* hearts!

"But I must stop, dear Mr. Carr, lest you, too, begin to think it desirable not to make further acquaintance with me! I will send you some daffodils when they are out about mid-April. I have a great balance in the bank of daffodils. Been collectiug them for many years, and diligently digging and dividing and replanting them as if an acre or two would show me just where Heaven lies, just the latitude and longitude, north or south of the equator!"

We may add that the above delightful bit of playful metaphor arose from our returning the sum he sent to pay for the Bee Journal, and adding—by way of reminder that it was

not the first time we had done the same thing —the words "don't do it again, please."

In another note referring to the "Royal' show, then on the tapis, he says :—

"I shall hope to see much of you at the Show here in June. I mean, you are likely to see too much of me. Now, what can I do in the way of help? I am too near town to expect to have any honey to show, and exhibiting of any kind is not much in my line. But give me a job to clean the windows and wash up the dinner and tea things, arrange the flowers, dust the parlour, or any homely jobs of that kind, and I shall be delighted.

"Shall I arrange for a good collection of bee flowers—not dead, dry mummies, but sweet living stuff; say, various clovers, sainfoin (too early, perhaps ?), and such like ? Not hothouse flowers and maidenhair fern, which are incongruous amongst British honey.

"Have you room for any plants, because it will be a great pleasure to me to send *you* some ?"

(*Continued next week.*)

TOTAL HONEY IMPORTS FOR 1898.

The total value of honey imported into the United Kingdom during the past year is shown in the following monthly returns for 1898 as furnished to the BRITISH BEE JOURNAL by the Statistical Office, H.M. Customs :—

January	£2,424
February	838
March	2,584
April	2,426
May	4,433
June	3,870
July	1,293
August	1,929
September...	1,407
October	1,033
November...	953
December	1,343
Total for the year	£24,533

HONEY IMPORTS FOR THE YEARS 1891 to 1898 INCLUSIVE.

In response to a correspondent who dates from Chester on the 11th inst., we reprint the returns furnished to the B.B.J. giving value of honey imported each year since 1891 as follows :—

1891	£38,427
1892	62,727
1893	29,087
1894	33,272
1895	41,302
1896	29,296
1897	21,861
1898	24,533

OXFORDSHIRE B.K.A.

Mr. G. H. Morrell, M.P., who has done so much to foster the craft of bee-keeping in Oxfordshire during the past twenty-five years, has been re-elected President of the Oxfordshire Bee-keepers' Association, and a new secretary has been appointed in the person of Mr. H. M. Turner, 4, Turl-street, Oxford, and Romanhurst, Northleigh Witney. The new committee, consisting of Messrs. E. Goddard, J. Salmon, E. Jordon, W. Beeson, E. Slatter, E. F. Turner, and A. Humphris, enter upon their duties under somewhat unfavourable auspices, as the Association has a deficit of £12 to face. Mr. Morrell, however, has kindly given £5, the Rev. F. C. Dillon £2, H. M. Turner 10s. 6d., and J. Perry 10s., towards its extinction, and there is every hope that it will be wiped off before the Association commences its practical work. Mr. Hancox, of Sandford St. Martin, has very kindly offered to take the spring tour of the northern part of the county free of charge.—*Communicated.*

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to "The EDITORS of the 'British Bee Journal,' 17, *King William-street, Strand, London, W.C.*" *All business communications relating to Advertisements, &c., must be addressed to* "THE MANAGER, 'British Bee Journal' *Office*, 17, *King William-street, Strand, London, W.C.*"

*** *In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

BEE NOTES FROM OXFORD.

[3615.] The other day I came across an old form of bee-stand at a farm a few miles from here. It consisted of a number of openings or recesses formed in the wall of a building all along one side next the garden. The openings were formed with stone, and were placed about 3 ft. from the ground, and would hold one skep each. They are not used now, but stand showing that some one in the last century, or even before that, took considerable pains and trouble to accommodate, as one says, "the ambrosial hive," and one can see what vastly superior facilities we have to-day to make the bee-craft an interesting pursuit, as well as being able to control and direct the work of the bees.

The idea was suggested to me the other day, speaking of the use of carbolic cloths as recommended by "Military Bee" recently in B.J., Does the smell remain on tops of frames long

enough to be any serious check to hinder them from going up into supers to work with might and main? Of course it spends itself in time, and with their traffic and ventilation fanning it is got rid of, but is it the more excellent way to put any hindrance in their way just when they want to go into work hammer and tongs. When the attendant priest told the dying Spanish warrior he must forgive all his enemies, he replied that he had not any. How is that, said the priest? "I have killed them all," said the man of war; but he must have had a rough time of it. So the bees get rid of this to them objectionable smell; but some, it appears, think they would be best without the bother and trouble it must be to them. That they get over it and do well I know, for a relative of mine last season took over 100 sections from one hive, and he uses carbolic cloths. Personally, I have not much of an opinion either way, so should like to hear from some who have practical knowledge as to the use of carbolic cloths.—JOHN KIBBLE, *Charlbury, Oxford, March* 13.

HOME-MADE SECTION RACKS.

[3616.] Spring is now rapidly approaching, and it is, of course, the correct time to purchase hives and appliances. I have already started filling my sections with foundation, and fixing them in their racks. About five days ago, while turning out a drawer, I came upon some unused cigar-boxes, and after trying, I found that after having knocked the bottom out a section would fit it exactly, and that the whole box would comfortably hold five sections (with dividers). At the same time, having no single dividers handy, I discovered that a post-card fitted it exactly, and did not bend at all. Consequently I shall use these section-racks on all my stocks at the early honey-flow in May. I hope a few readers of the B.B.J. will test this little device. The weather continues mild here, and promises an early summer. So far all my stocks have come through the winter very satisfactorily.—C. P. S., *Birmingham, March* 13.

[We are always pleased to get descriptions how to utilise home-made appliances when they can be made effective for the purpose, but we must give a word of caution with regard to trying post cards, or, indeed, cardboard of any kind, for separators. The bees will be almost sure to nibble them all away.—EDS.]

DRIVING BEES IN MARCH.

[3617.] The weather being so extremely fine and warm, on Thursday last, the 9th inst., I ventured to try my hand at driving the bees of two skeps in my apiary with the object of establishing them in a frame-hive. One lot drove very well, the bees being evidently very strong in numbers and having a large amount of brood already in the combs. The other lot I found to be queenless, with very few bees, so I united both lots in a hive, with comb foundation (full sheets), and put a bottle of medicated honey on top, which I have now substituted for the large cake of flour candy previously in use.

Will you please tell me—1. How soon I ought to start syrup feeding? 2. How much I ought to give them per week? 3. May I safely leave off when fruit blossom comes on, of which there is a large amount in this district?

After having united the bees, I looked over the combs carefully, and found in one of those from the queenless colony about six or eight cells with *irregular* punctures in cappings and cells *perfectly empty*. I immediately thought of foul brood, but found that comb smelt perfectly sweet and nice. 4. Am I safe in supposing from this that it is not foul brood? 5. If it should be foul brood, will the bees be all right, seeing that their food has been medicated, and they have had none of the old combs? 6. What must I do to honey and wax to make it safe to give to bees again?—C. A. ATCHLEY.

[We insert the above in this column in order to give it additional emphasis, and show how easy it is to make mistakes in bee-management for want of reading up the subject before undertaking operations such as the above. It was very bad policy to break up the skep in March, and we ask what has become of the brood found in skep? For the rest we reply:—1 and 2. Start feeding at once, and plentifully. 3. Yes, if weather is fine. 4. We cannot say without seeing sample of comb. 5. No, it will be all wrong, we fear. 6. Boil for an hour or two.—EDS.]

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Mr. Yarwood's apiary, seen on next page, goes a long way towards removing the sameness inseparable from pictures of rows of unpicturesque modern bee-hives, the cork-covered hives in front looking *almost* as well—from the artistic point of view, of course—as old skeps with straw-hackles for roofs! We congratulate him on showing us a neat little apiary, and himself looking like a real practical bee-man at work. For the rest, he writes us as follows:—

In answer to your request for a few notes on this district and my experiences in bee-keeping, I beg to say my business is that of a florist, and the bee-garden seen in photo is situated at Sale Moor, six miles south-west of the city of Manchester, on the Cheshire side of the Mersey. I commenced bee-keeping in August, '95. I began with one skep, bought from an old friend, who, after being a skeppist for just twenty-two years, is now, I am pleased to say, quite converted to the bar-frame system, five of his eleven stocks being in

"W. B. C." hives. The first skep my friend ever saw driven was operated on by the late Mr. A. Pettigrew, author of the "Handy Book of Bees," who lived within half a mile from here, and whose garden still looks just the same as when the famous skeppist kept his bees there and tried to persuade the farmers around there to "sow plenty of broad beans."

The spring following my purchase of the skep referred to above I chanced to attend an auction sale, when the two large hives covered on the outside with cork-bark (seen in picture), along with a full rig-out of feeders, smoker, &c., were knocked down to me for 3s. 6d.! So you see I started on the cheap. The hives, as you will see, are nice to look at, besides being beautifully made inside, and I find that bees winter well in them, the one drawback being the fixed brood-box, which is of glass; both these hives opening at each side and also at the back, so that I can see the whole of the brood-nest, and have often watched the queen laying on the outside combs.

I have never had any very big "take" of honey, the most obtained from a single hive being 75 lb.; but during my five years' experience of bees I have never had a bad season until that of 1898, which I prefer not to talk about. We, however, never get a really good clover honey—a fact which I think is due to there being so many flowers grown everywhere about. Nurserymen and florists are as plentiful as bees; and when you live, as I do, within a stone's throw of the largest farm in the country devoted to cut flowers, you can safely talk of "Machet Mignonette" by the acre; so you may judge that the colour of the honey is usually dark, though the flavour is good. That this is so we prove by our honey selling readily at 1s. a pound.

When I became a member of the craft there were only three or four bee-keepers around here; but now we number over twenty, more than half of whom are members of the Lancashire and Cheshire B.K.A.

I cannot help saying how sorry I am at the failure of the bee-season of '98—not for myself, but because of the several beginners we have this year, who have spent a good deal in starting, and were looking forward to such a good time and some return for their outlay. Their bad luck makes me think it is essential, if you are to become a good-tempered bee-keeper, that you must possess plenty of hope in the future.

Like your esteemed correspondent, "Lordswood," I possess an out-apiary of one hive, situated in the farming district of Baguley, four miles away, and the farm homestead which holds my precious "out-apiary" is 600 years old! Its gables are decorated with ancient stone knobs, and the date over the square stone porch is 1397, which needs a "Lordswood" to describe as it might be done.

MR. JOHN YARWOOD'S APIARY, SALE MOOR, CHESHIRE.

WEATHER REPORT.

WESTBOURNE, SUSSEX.

FEBRUARY, 1899.

Rainfall, 3·05 in.
Heaviest fall, ·59 in., on 8th.
Rain fell on 12 days.
Above average, 1·40 in.
Maximum Temperature, 55°, on 10th.
Minimum Temperature, 23°, on 28th.
Minimum on Grass, 15°, on 28th.
Frosty Nights, 10.
Sunshine, 132·2 hrs.
Brightest day, 22nd, 9·5 hours.
Sunless Days, 5.
Above average, 28·4 hours.
Mean Maximum, 46·3°.
Mean Minimum 34·5°.
Mean Temperature, 40·4°.
Above average, 2·9°.
Maximum Barometer, 30·75°, on 28th.
Minimum Barometer 29·23°, on 13th.

L. B. BIRKETT.

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING MARCH 11, 1899.

1899.	Bar. in.	Tem. 9am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Mar. 5....	30·14	33·0	46	26	20	35·7	—
,, 6....	30·03	35·0	45	28	17	36·2	—
,, 7....	29·63	35·0	51	21	30	35·6	—
,, 8....	29·52	40·0	48	32	16	39·8	·21
,, 9....	28·97	39·0	46	36	10	40·9	·10
,, 10....	29·71	40·0	51	31	20	40·7	—
,, 11....	30·15	47·0	59	38	21	48·2	—
Means	29·74	38·4	49·4	30·3	19·1	39·6	·22*

* Total, ·22.

Mean vapour tension, 0·187 in.; mean relative humidity, 78 per cent.; mean temp. of the dew point, 32°·1. The rainfall, viz., ·22 in., =4,977·06 gallons, or 22·22 tons to the acre, or 1·10 lb. to the square foot. For the week ending March 4, the mean temp., viz., 36°·8 (not 37°·1, as sent in error), was −3°·0, and the rainfall, viz., nil, −·28 in. The mean max. was 47°·6, not 47°·7, and the mean range 20°·9, not 21°.0, for which errors I apologise. The mean temp., January 1 to March 4, viz., 40°·2, is +2°·3, and the rainfall, viz., 4·20 in., +·47 in. Absolute drought February 22 to March 7=14 days.

RESULTS OF METEOROLOGICAL OBSERVATIONS WINTER (DEC.-FEB.) 1898-99.

Barometer.

Highest, 30·64 in., on January 26.
Lowest, 28·81 in., on January 2.
Range, 1·83 in.
Average height, 29·86 in.

Thermometers.

Highest Max. Shade Temp., 62 deg., on February 10.
Lowest Max. Shade Temp., 35 deg., on February 5.
Highest Min. Shade Temp., 54 deg., on December 6.
Lowest Min. Shade Temp., 19 deg., on February 4.
Range, 43 deg.
Greatest Daily Range, 27 deg., on February 23.
Least Daily Range, 2 deg., on December 6 and 7, and January 23.
Highest Shade Temp. at 9 a.m., 55·5 deg., on February 10.
Lowest Shade Temp. at 9 a.m., 22 deg., on January 25 and February 4.
Highest Mean Daily Temp., 55·0 deg., on December 6.
Lowest Mean Daily Temp., 27·5 deg., on February 4.
Mean of Highest Daily Readings, 47·6 deg.
Mean of Lowest Daily Readings, 35·0 deg.
Mean of Daily Range of Temp., 12·6 deg.
Mean Temp. of the Quarter, 41·3 deg.
Mean of Dry Bulb (9 a.m.) Readings, 40·2 deg.
Number of Days Frost in Shade, 31.

Rainfall.

Number of days on which ·01 in. or more fell, 57.
Greatest Fall in 24 Hours, 0·51 in. on December 6.
Total Fall in the Quarter, 6·16 in.

The Mean Temp., viz., 41·3 deg., is +4·0 deg., and the rainfall, viz., 6·16 in., +·38 in. For the winter (December-February) 1897-98, the Mean Temp. viz, 40·3 deg., was +3·0 deg., and the rainfall, viz., 3·51 in., −2·27 in.

FRED. COVENTRY.

Duddington, Stamford, March 13, 1899.

A "FIND" OF HONEY IN '99.

BEE SUPERSTITIONS.

A B.J. reader sends us the following from a recent issue of the *Oxford Times*:—

The workmen busy at St. Philip's Priory on the Woodstock-road, have found a colony of bees, with comb containing about 35 lb. of honey, whilst making alterations in the masonry necessary to the joining of a new wing to the old house. Superstition dies hard, and the many wonderful properties ascribed to these insects are still firmly credited in this neighbourhood. A chat with an old lady who all her life has had marvellous power with bees, always leaves me a convert to their far-reaching knowledge. Living as they do in such intimate relationship with ourselves, our gardens, and our flowers, they see everything that passes in their midst. But like children they do not wish to have their knowledge taken for granted, they like to be told things, especially when a death occurs in the family with whom they are associated. Then someone must go and tell the bees, or they will leave hives and honey and go forth an offended company to found a colony elsewhere. My old lady told me she used not to believe this common report, but she had proved its truth herself. Her daughter died, and she deliberately neglected to tell the bees:—"Well, marm, if you'll believe me, they left the hive—they did, indeed—and a whole lot of honey behind 'em." On another occasion a new sun-bonnet of her own was the cause of much disturbance amongst the little people. Her old sun-bonnet had become quite shoppy, and she had a nice new one—blue, I believe, in colour. I have a mental picture of her walking forth one summer morning in the new sun-bonnet to see her busy little folk. She is a pretty old lady; she must have been a charming sight that day. "Well, marm, if you'll believe me, they bees wouldn't 'a let me be—no, they wouldn't; they comed and buzzed about me, and all over the new bonnet, and fairly drove me back into the house again." "Didn't they recognise you?" I said. "It wasn't that, mum, they knew me well enough; they didn't like the new bonnet. I comed out

again in the old one, and they didn't take a morsel o' notice o' me. Next day I tried again—just the same. Ah! they're knowing little creturs, bees are." The mesmeric qualities which make a "sap-engro" (readers of "Lavengro" will remember) are shared in a lesser degree by those persons who have a special gift for bees. They can take a swarm, handle the hives, allow bees to crawl upon them freely, with no fear of being stung. Bee-keepers are like journalists—born, not made.

Queries and Replies.

[2173.] *Building up Stocks from Driven Bees.—A Breakdown.*—Last autumn, a neighbour having promised me the bees from four of his stocks for the trouble of driving, I gladly accepted the offer, as driving condemned bees is a pleasure to me at all times, though it was very late in the season—quite the end of September. By uniting I reduced the four lots to two, and by providing them with combs from other hives, I had each colony on two combs from which the contents had been extracted and four full frames snugly housed and well provided for before the winter. Yesterday (March 10), the weather being very favourable, I opened out the hives and made an examination. In the first there were good-sized patches of brood on four combs and everything looked prosperous and promising. In the second, however, though the bees were fairly numerous, the state of affairs bore a very different aspect. One of the combs had broken down, leaving an ugly gap at the top and a still uglier confusion of comb in the centre. I imagine an accident had happened to one of the empty combs while the bees were taking down the syrup I gave them during the first few days after their arrival. This had evidently proved fatal to the queen. A drone was buzzing about here and there, and drone brood was the only brood to be seen. I therefore ask:—1. Is not this a proof of queenlessness? 2. What would you recommend me to do—unite the two colonies into one, or, by supplying brood comb to the queenless hive, endeavour to keep up the number of stocks? 3. Would the presence of drones render it reasonable to anticipate that a new queen would be fertilised at this time of year? 4. As a mere experiment would it be interesting enough to risk the chance of failure?—*Hampshire North, March* 11, 1899.

Reply.—1. Not a certain proof of queenlessness, though the inference leads that way. The drones are the progeny either of an unfertilised queen or a fertile worker. Most probably the former. 2. The chances of working the stock with any hope of success are so mall that we should "unite" as suggested. 3. March is too early for queen mating in this country. 4. It would no doubt be both interesting and instructive to try the experiment of keeping the worker bees together in sufficient numbers to rear brood from a queen reared now and fertilised in April.

[2174.] *Contracting Hives in Spring.*—I have three bar-frame hives; two of them had twelve frames in each last summer, and the third, a swarm, had ten. In the autumn I took away only one frame for extracting from each of the stocks and two from the swarm, not more, because I found that the next frame had a good deal of brood in it. Now, consequently, there are eleven frames in each of the stocks, and eight in the swarm. The bees seem all right, but they do not in either of the hives cover the last two or three frames at the back; in fact, there are hardly any bees on them. These back frames are half full of sealed honey untouched. 1. Ought I to take out these frames and close up the dummy board to as many frames as the bees cover, and then extract the honey, and put back the empty combs, as more room is required? In the lower third of these frames the cells are nearly all full of a soft brown cheesy substance, some cells being coated on the top with a sort of white mould. 2. What is this, and is it all right? 3. I suppose the fact of so much sealed honey being left in the back frames now means that there was an unnecessarily large amount of food left for them to winter on? Is it not so? If I extract the honey from these frames, the lower cells will still be full of the brown stuff. Will it do to put the frames back in that condition, or if I cut out this, will the bees join new comb to the old upper half and continue it down to the bottom of the frame? I should be grateful for advice on these matters.—Edw. C. Cripps, *Cirencester, March* 13.

Reply.—1. We rather advise removal of combs containing neither brood nor food, for it is probable that stores will be none too plentiful in the body of hive. To leave bees short of stores at this season is suicidal policy, and as brood-rearing increases, the consumption of stores is very heavy. 2. Nothing worse than mildewed pollen. 3. It often happens that what appears to beginners an unnecessarily large amount of stores is really a very short supply, in view of the long time ahead before honey is available from natural sources. We do not advise your cutting out cells of pollen as proposed, the bees would most likely fill the gap with drone-comb.

[2175.] *Dealing with Foul Brood.*—Can you give me a little advice on the following:—I started bee-keeping in the autumn of '97 with a good hive of driven bees, which did well last summer, and gave me some surplus honey. I also got together last summer a few stocks of bees in skeps, and when driving them in the autumn, in order to put the bees in bar-frame

hives, I discovered that every skep was infected with foul brood. The supered stock also had a very slight touch of it. I put all the bees out of the skeps in new bar-frame hives, burning all the old skeps and comb, and fed up liberally with medicated syrup. I may say that no trace of foul brood appeared in the later batches of grubs. I fed the stock in frame-hive also, and the frames were practically clear of foul brood in October, so I thought that, with the help of napththaline and medicated syrup, I should be all right for the spring. I have examined the bees to-day (March 13), and am vexed to see that all the small patches of early brood are infected, even though they are in hives containing medicated syrup only. What do you advise me now to do? Would taking away the frames with brood on, and disinfecting the others, be of any use, or must I again destroy all combs, and start afresh, or have a bonfire, and give up bee-keeping? There is foul brood in the neighbourhood.—B. G., *Glos.*

Reply.—We sympathise very much with "B. G." in his adverse first experience of bee-keeping, but have little doubt that there has been a lack of the care imperatively necessary in dealing with so contagious a bee disease as foul brood. Our correspondent does not state what book he has studied on the subject, or, indeed, if any work dealing with this disease has been read at all. If the latter is the case, we can understand the failure, but if proper steps have been taken, with some knowledge of what to do, and how to do it, we are less hopeful for the future than we should be if he has still to learn all about foul brood. In any case, he must rest assured that there is no need to give up bees in despair of being able to keep an apiary healthy with so much evidence to the contrary in the success attained by good bee-keepers.

[2176.] *Preventing Second Swarms.*—1. On July 28, a large swarm issued from one of my hives on the 31st (the first opportunity) I examined the hive to prevent a second swarm by cutting out all but one queen cell. I found several queen cells but all empty. Is not this contrary to general experience? 2. About the same date another swarm issued, were hived and fed, but for a week scarcely a bee stirred from the hive. After a day or two more I examined and found a little brood. After this they seemed to go on pretty well, but I got no surplus. This year they still seem to be asleep. Scarcely a bee comes out even in the hottest part of the day though, as a matter of fact, there are more bees in the hive than in the others where pollen is brought in freely. Can you tell me probable cause and remedy?—J. S. Downham, *Norfolk, March* 13, 1899.

Reply.—1. It would be very unusual to find all queen-cells empty but one, if this is what we are to understand, but a few abortive cells are not at all uncommon. 2. We could only give a trustworthy opinion after examining the combs. The bees may be worse workers than others, just as human beings are industrious and lazy; but the fact of the bees being strong in numbers would incline us to try them for another season, and requeen the stock if not satisfactory at the close of the coming bee-season.

[2177.] *Dealing With Swarms in Hollow Trees.*—I have got a swarm of bees in a hollow tree near here, and have fixed up a box against the hole in tree from which the bees come out, but I cannot get them to stop in the box. I have put a piece of queen-excluder zinc across the hole, but they work through it and pass up into the tree just the same. 1. Would it be advisable to fix one of Porter's spring escapes across the entrance-hole to tree and so put a stop to the bees going back? If it will help to keep them in the box I could put some combs of brood in it, so that they might hatch out a queen. 2. What do you think of this plan? 3. If I got the bees to stay and breed in box will they remain in another hive when transferred to it? My hives are about a half a mile away from the place. 4. Or would you wait for a swarm.—A. A., *Belton, Rutland, March* 13.

Reply.—1. Our correspondent must give up the attempt to get bees to stop in any box where they are cut off from communication with their queen or mother-bee. 2. Just what is expressed in our reply above. 3. Bees will only stay where there is a queen or the means of raising one, but if they have a queen and brood there is little difficulty in locating them anywhere. 4. Yes, under the circumstances.

[2178.] *Queen-rearing.*—I shall be glad if you will give me some advice on this subject? I have an apiary situated on a railway bank nine miles from home, which I visit occasionally evenings about eight o'clock, and generally Saturday afternoons. I have studied the system advocated in Cowan's "Guide-Book," but do not see how I can carry out same, as I am unable to watch progress, owing to my not being on the spot. Last year I lost three queens out of eight, and endeavoured to replace them by introducing smarts and condemned bees, also by inserting combs of brood, but without success. If you could help me in the matter, I will be obliged.—C. R. Boxall, *Wilts, March* 11.

Reply.—It is quite impossible to practise queen-rearing with success unless you are able to time your visits to the hives to an hour or so. So much depends on being there to remove queen-cells containing hatching-queens while they are safe from being destroyed by their more advanced sisters, that, as we say, time is a *sine quâ non* so far as not allowing the hatching-out period to be unwatched. Those who rear queens regularly can, however, arrange to be on the spot when queen-cells are ready for removal.

Echoes from the Hives.

Wellington, Salop, March 11.—I herewith send you an "Echo" from mid-Shropshire. I think we may safely say that the bees have commenced in real earnest. It has been a real pleasure to watch them at work this lovely spring day (March 11). I took the opportunity of removing the outside frame in a few hives, and all seems well. The outside frames are yet full of sealed food, while it was not difficult to find brood (without disturbing frames) within an inch of top-bars. There is every reason to hope that when frames are moved apart at the end of this month for a further examination, we shall find ample cause for satisfaction. The weather here has been on the whole very mild. We do not get those extremes of gales and floods that, unfortunately, others of our brethren in the craft meet with from time to time. We can only hope that at the end of '99 we might have to report as we do now at the beginning, "good things" concerning our bees.—JAS. CLAY.

Newport, Mon.—The bees of my eight stocks are busily carrying in pollen (from nut catkins). The weather is very mild and the sun shining brightly, so I ventured to raise the quilts on two lots and, finding them rather short of stores, gave each a cake of candy to each and covered them up snugly. The unusual mildness which has prevailed here since October has resulted in a large consumption of stores, but the bees appear to be very healthy and strong in numbers with the exception of two stocks.—CYPRIAN.

Laurencekirk, N.B., March 13, 1899.—Notwithstanding the very open and mild winter, "bees" have wintered "well," and are quite up to an average at this date. Everything betokens an early spring, and we have hopes of being in possession of rousing stocks by the time the harvest opens. So far as I can judge, stocks have not consumed a larger amount of stores than in more severe winters; at least they are all very well off for food in the meantime, and breeding has commenced.—J. S.

AVOIDING POLLEN IN SECTIONS.

In my last I mentioned the fact of having lost a large amount, by not understanding the business of producing honey better than I do. This loss was caused partly by having pollen stored in sections by the bees. Several thousand sections, when finished, contained so much of this that they were unsaleable, and the honey in as many more was so poorly fastened to the wood that it was almost impossible to get them to the nearest towns without breakage, let alone shipping them. In fact, a great many were broken in handling before they left the apiary through being so slightly attached to the wood at the top.

With but few exceptions, pollen in sections has caused me some loss each season, and to a less extent sections containing honey imperfectly fastened also, but never before anything like this. A year earlier, under the same management, there was practically no loss from either cause. The season might, therefore, in some sense, be accounted to blame, but in order to make a success of the business at present one must be able, and understand how, to meet the conditions of different seasons, and with such knowledge I have no doubt the loss I have described might have been avoided. Admitting that I might not be able to entirely avoid it if the same conditions were to occur again this season, yet I consider what I learned in regard to the matter was of more benefit to me than what was lost; for I am a young man yet, and expect to continue to follow bee-keeping as a business in the future.

I will first say that pollen in this, my immediate locality is very abundant through the entire season, but as this is used mainly in brood-rearing, the natural instinct of bees causes them, when conditions are favourable, to store it in the brood-chamber, where it will be easily accessible for this purpose. But the plan I follow with swarms, either natural or artificial, is to hive them in a hive with frames containing "starters" only, when, if the supers from the parent hives (in which work has already commenced) are put on in a day or two, work will be resumed in them at once, and a good queen will usually lay in a large part of the comb below as fast as it is built, so that most of the honey brought in is necessarily for some time stored in the sections.

I do not believe there is any other method by which as much honey can be secured in sections; and in a good season, or during a good flow, a swarm when first hived will not bring in much pollen for a few days. Last year the flow, except during the first few days, was very scant and irregular, and as it was those swarms treated as described that put pollen in the sections, it will be seen that this method should not be practised during a poor flow in a locality where pollen is abundant, for when they cannot secure honey they will carry in an excessive amount of pollen, and must of necessity store it in the sections.

Now, I have not much doubt that to give one or two frames in each hive containing drawn comb, then waiting until considerable comb was built in them before putting on the sections, would overcome the difficuly, or if no frames of drawn-out combs were on hand, a like number filled with foundation would probably prove effective.

There is so much pollen here that colonies that did not swarm would ofttimes carry it into the sections; but years ago I accidently learned how to almost entirely overcome this by changing the places of combs in the hive. This was done to discourage swarming.

My practice is, at the approach of the

swarming season, to replace the two outside combs with those that contain the most sealed brood, the two from the outside which usually contain a large proportion of what pollen there is in the hive are then placed in the centre. If done at the right time this has a tendency to check swarming, and I soon noticed sections over colonies so treated hardly ever contained any pollen. Such an abundance of pollen right in the centre of the brood-nest may possibly act as a check to their gathering much more for a time. However this may be, there would soon be plenty of room for them to store a large amount again in the two outside combs.

As to sections containing honey but slightly fastened to the wood, I believe there are means by which this can be largely avoided, no matter what the character of the flow is, and even if only small starters are used. But as this article is already so long I will have to wait to explain my experiments in regard to this matter until some other time.—C. DAVENPORT, in *American Bee Journal.*

ANCIENT BEE LORE.

A BEE JOURNAL reader kindly sends us the following translation from an ancient Saxon MS. in Corpus Christi College, Oxford. It is headed "Saxon Leechdoms," vi., p. 385, and reads thus :—

"FOR CATCHING A SWARM OF BEES.

"Take some earth, throw it with thy right hand under thy right foot and say, 'I take under foot ; I am trying what earth avails for everything in the world, and against spite and against malice, and against the mickle tongue of man and against pleasure.'

"Throw over them some gravel where they swarm, and say,

'Set ye my ladies, sink,
Sink ye to earth down
Never be so wild,
As to the wood to fly.'

"'Be ye as mindful of my good as every man is of rural and estate.'"

Bee Shows to Come.

June 5 to 8 at Windsor.—Bee and Honey Show in connection with the Royal Counties Agricultural Society. Several classes for past season's honey. Schedules from A. D. Woodley, Hon. Sec. Berks B.K.A., 17, Market-place, Reading.

June 9 and 10 at Epping.—Show of Bees, Honey, and Appliances in connection with the Essex Agricultural Society. Schedules from Mr. G. F. Offlahertie, Monghyr Cottage, Loughton, Essex. **Entries close May 17.**

June 19 to 23 at Maidstone.—"Royal" Agricultural Society's Show. Bee and Honey Section under management of the B.B.K.A. Schedules from E. H. Young, Sec. B.B.K.A., 12, Hanover-square, London, W. **Entries close May 1.**

September 6 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 30.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

A. J. H. (Millom).—*Suspected Queenlessness : Packing Skeps for Transit.*—1. The supposed dead queen was a worker bee. 2. Skeps of bees for transit by rail should be prepared two days beforehand by having a couple of "skewers," *i.e.*, straight, smooth wooden sticks, thrust right through the combs and straw. When moving lift the skep on to a square of very open canvas or cheese-cloth, and, lifting the corners, tie securely with string. Then turn skep *bottom upward* into a rough, square lidless box, to keep it upright. Fix a stout rope to carry by and label, "Live Bees with Care!"

TOM C. EVANS (Llandilo).—*Feeding Driven Bees in Spring.*—1. The weight of sugar given (94 lb.) in autumn to five stocks should have been ample to winter on, but you might give a look into each hive to make sure how stores are holding out. 2. Yes, syrup may be given when weather is warm. 3. Read up the method of detecting foul brood as given in "Guide Book."

HONEY (Worcester).—*Spring Feeding.—Using Foundation in Sections.*—1. There may be no need for feeding if stores are plentiful. Give a slight glance at combs to make sure. 2. Full sheets of foundation will ensure good combs in sections when season is favourable. 3. Let excluder zinc lie flat on frame-tops.

H. M. J. (co. Down).—*Mounting Objects for the Microscope.*—1. A series of papers on this subject appeared in B.B.J. (vol. xix., 1891). They may be had from this office for ninepence, post-free. 2. The pea-flour sent will do very well as artificial pollen. 3. We will be glad to have your experience on "bees fighting among themselves."

C. O. B. (Woking).—*Starting Bee-keeping.*—By far your best course will be to join the Surrey Bee-keepers' Association. The membership fee is but trifling, and the Hon. Sec., Mr. F. B. White, Marden House, Redhill, will put you in communication with the nearest expert of the Association to Woking, who, being acquainted with the place, is best qualified to give advice.

F. W. (Peterborough).—We do not know if "Mr. Dreekoupil, of Carniola," is still in the bee trade.

*** *Several Queries, &c., received will be attended to in our next.*

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

ANNUAL MEETING.

The annual general meeting of members was held on Thursday, March 16, at 105, Jermyn-street, S.W., the chair being occupied by Mr. E. D. Till, in the absence of the President, the Baroness Burdett-Coutts, from whom a letter was read expressing regret at being unable to attend the meeting. The members present included the Hon. and Rev. Henry Bligh, Rev. W. E. Burkitt, G. H. Morrell, M.P., Miss M. L. Gayton, Major Fair, Messrs. L. Belsham, T. Bevan, R. C. Blundell, Spencer Canning, W. Broughton Carr, W. Gutch, W. H. Harris, J. M. Hooker, H. Jonas, W. P. Meadows, J. H. New, W. F. Reid, T. Scattergood, A. Seth-Smith, W. J. Sheppard, E. H. Taylor, E. Walker, J. Willard, C. N. White, F. B. White, F. H. White, and the Secretary. Letters explaining enforced absence were received from the Rev. G. W. Bancks, Mr. T. I. Weston, and others.

The minutes of the last annual general meeting were read and confirmed.

The Chairman moved "That the report and balance-sheet for the year 1898 be received and adopted," and referred with satisfaction to the marked advance in the educational work of the Association, both in connection with shows and examinations. The Swanley Apiary was, said Mr. Till, started under rather adverse circumstances, but there was every reason to hope for good results during the approaching season. The resolution was seconded by Mr. Wilfrid Gutch, and carried unanimously.

A vote of thanks—proposed by Mr. J. Willard, seconded by Mr. F. B. White—was passed to the retiring Council and officers.

The Hon. and Rev. Henry Bligh moved a vote of thanks to the Council of the Royal Society for the Prevention of Cruelty to Animals for the gratuitous use of their board room for committee and other meetings. He referred to the time, many years ago, when Mr. Hooker, himself, and five others met at the late Mr. Cheshire's rooms for the purpose of considering the formation of the B.B.K.A. Of the original seven only Mr. Hooker and himself now remained, but amid the many changes they had witnessed, it was gratifying to know that the Society still prospered, that the Baroness Burdett-Coutts continued to manifest such an interest in its welfare, and that they had such comfortable rooms in which to conduct the periodical meetings. The resolution was very appropriately seconded by Mr. J. M. Hooker, and carried with acclamation.

On the motion of Mr. Till, seconded by Mr. W. F. Reid, the following officers were unanimously elected :—President, the Baroness Burdett-Coutts ; Vice-President, Sir James Whitehead, Bart. ; Treasurer, Mr. H. Jonas ; Auditor, Rev. R. Errington ; Analyst, Mr. Otto Hehner.

The following gentlemen were, on the motion of Mr. Gutch, seconded by Mr. T. Bevan, elected to serve on the Council for the ensuing year:—Mr. R. T. Andrews, Rev. G. W. Bancks, Hon. and Rev. Henry Bligh, Mr. R. C. Blundell, Mr. H. W. Brice, Mr. W. Broughton Carr, Mr. T. W. Cowan, Major Fair, Miss M. L. Gayton, Mr. W. H. Harris, Mr. J. M. Hooker, Mr. H. Jonas, Mr. J. H. New, Mr. F. B. Parfitt, Mr. P. Scattergood, Mr. W. J. Sheppard, Mr. E. D. Till, Mr. E. Walker, Mr. Fred. B. White, Mr. T. I. Weston, and Mr. C. N. White.

A letter was read from Mr. J. W. Spencer, of Atworth, Wilts, suggesting the issue of simple leaflets setting forth the uses and value of honey for sale at a low rate to members and others, and printed in a form suited for wrapping section or extracted honey at the time of sale. Mr. W. H. Harris thought such leaflets might be advantageously circulated by County Associations with, or in the same way as county labels are now distributed. The desirability of formulating a standard for honey, was advocated by Mr. G. H. Morrell, M.P., with the object of preventing the fraudulent sale of such mixtures as are now to be found in the market. In the opinion of Mr. W. F. Reid there were many difficulties in the way of carrying out the proposal, in fact it was almost a chemical impossibility to fix a standard for honey—no two samples of which were exactly similar. Mr. C. N. White suggested that samples of good honey should be put up by the B.B.K.A. and be obtainable by County Associations if required. The matter was left for consideration by the Council.

It was resolved that in future the County Association reports be bound up with the B.B.K.A. reports in July of each year; any reports sent in after July 1, to be held over till the year following.

At the instance of some member present the "hat" was passed round the room and resulted in the pleasing addition of £2 15s. 6d. to the Special Fund in aid of prizes at the forthcoming "Royal" Show at Maidstone.

Mr. W. H. Harris moved, Mr. P. Scattergood seconded, and it was carried unanimously that a letter conveying the remembrances, sympathies, and cordial greetings of the members in general meeting assembled, be forwarded to their esteemed chairman Mr. Cowan, who is now in California.

A vote of thanks to Mr. E. D. Till for presiding concluded the proceedings.

[Report of the *Conversazione* which followed at 6 p.m. will appear next week.]

Preparatory to the above, a meeting of the Council was held at 2.45 p.m. at 17, King William-street, Strand, W.C., Mr. Till occupying the chair. There were also present :—Miss M. L. Gayton, Rev. W. E. Burkitt,

Major Fair, Messrs. R. C. Blundell, Henry W. Brice, W. Broughton Carr, J. M. Hooker, W. F. Reid, P. Scattergood, C. N. White, and the Secretary.

The minutes of the previous meeting were read and confirmed.

The following new members were elected, viz. :—Sir James Whitehead, Bart., Wilmington Manor, Dartford (to life membership); Wyckham Blackwell, Hampton-in-Arden, near Birmingham; C. H. Spencer Canning, Balham, Surrey; John Cooke Harker, 170, Denmark Hill, S.E.; Chester B.K.A., Hon. Sec., Rev. E. Charley, Ince Vicarage, Chester; Lancashire B.K.A., Hon. Sec., F. H. Taylor, Old Hall Lane, Fallowfield, near Manchester.

On behalf of the Finance Committee, Mr. Till presented a statement of accounts made up to date, and the report was duly approved.

The remaining business consisted mainly of preparations for the general meeting of members to be held at 4 p.m. on the same day.

The Council learned with considerable regret that Sir Thomas Gibson Carmichael was unable, owing to other engagements, to again come forward for election on the Council.

LINCOLNSHIRE B.K.A.

ANNUAL MEETING.

The annual meeting of the Lincolnshire Bee-keepers' Association was held at the Guildhall, Lincoln, on Saturday afternoon, March 11, the Rev. G. J. Young, J.P., of Claxby, presiding, in the absence of Lord Heneage. Amongst those present were the Rev. T. Gregory, Miss Brewster, Messrs. Barnes, F. J. Cribb, D. B. Downs, W. R. Garner, junr., Hugh Linley, Emerson, W. R. Lilley, J. M. Warrener, Dr. Sharp, Gadd, Pears, and R. Godson (Hon. Secretary). The report of the committee congratulated the members on the continued prosperity and success which had attended the efforts of the officers of the Association. The total receipts, including £21 13s. 9d. balance in hand, amounted to £179 13s. 2d., and the expenditure to £156 16s. 4d., leaving a balance in hand of £22 16s. 10d. In spite of removals from death and other causes there had been an increase of twenty-two members during the year. The membership now reach a total of 502, and they had every hope of a continued increase during the coming year. The committee regretted that it had to record the loss the Association had sustained by the death of the President, the Earl of Winchilsea, whose great interest in the Association was well known. They had also to mourn the loss of the Earl of Lindsay, Mr. R. T. Bourne, and Dr. T. Small, Secretary for the Boston district. The society now possessed forty-four honey extractors, which were in the hands of local secretaries, and available for the use of the members. The committee was pleased to report that foul brood seemed to be dying out, especially in the Caistor and Spalding districts, where it had been prevalent, and there were some cases in other districts. The tours of experts had been a substantial benefit to the members generally. The lectures had been well attended, and had stimulated the interest shown with regard to the industry. Special thanks were due to Lindsey County Council for a grant of £25 for lectures, and to several local societies for special prizes at the shows. The committee was again to have the management of the honey department at the Lincolnshire Agricultural Show at Louth, for which an excellent schedule of prizes had been prepared. The report was adopted. The Right Hon. Lord Heneage was unanimously elected president of the Association. A discussion ensued as to the work for the coming year, and it was agreed that the Association should take steps to engage an expert for a spring tour. Dr. Sharp and Mr. Cribb afterwards gave a lecture on "Bee Culture," illustrated by an entirely new set of lantern slides. —(*Communicated.*)

WARWICKSHIRE B.K.A.

ANNUAL MEETING.

The members have been able to write down 1898 as one of the most successful financial years since the formation of the Association twenty years ago. At the annual meeting, in the Grand Hotel, Birmingham, on Thursday, March 16, the committee had an encouraging report to present. Fifty-eight new members joined the Association during the year, and the committee look forward to the time when the Association will hold a position second to none in the counties. The income from all sources last year, including a balance of £11 12s. 5d. brought forward, amounted to £91 12s. 5d., and the expenditure to £61 7s. 3d., the balance in hand therefore being £30 5s. 2d. The committee desire to give the members the full benefit of the Association's earning capacity, and with that object they propose expending any balance in hand, after setting aside the necessary funds for the experts' Spring and Autumn tours, and in holding an exhibition of bee appliances and honey in connection with the Warwickshire Agricultural Show at Leamington in July. The committee regretted that the Warwickshire County Council declined to follow the examples of other counties by making a grant to the Association.—Mr. Joseph Taunton, who presided, moved the adoption of the report, and emphasised the importance and the financial advantage to the working classes of bee-keeping. The fact that from £50,000 to £60,000 worth of honey was imported into the country every year was a strong argument, he thought, in favour of the working classes interesting themselves in the matter.—Mr. W. Blackwell seconded the motion, which was cordially agreed to.—Lord Leigh was re-elected Presi-

dent of the Association, and the Revs. Canon Waller and Messrs. W. B. Gibbins and Joseph Taunton were added to the list of vice-presidents. The officers were all thanked for their services, and Mr. J. N. Bower was re-elected honorary secretary ; Mr. J. R. Ingerthorp was reappointed assistant secretary, and Mr. George Franklin was again appointed expert.—A discussion on apiculture generally followed the business, and much interest was shown in the subject.—The meeting was well attended, the members present including the Misses Piercy, Miss Hodgson, Mrs. Evans, Major Deykin, Mr. and Mrs. J. R. Young, Messrs. W. Blackwell, G. Franklin, Vernon Bower, R. Bower, A. Stanbury, A. H. Foster, J. N. Bower (hon. secretary), J. R. Ingerthorp (assistant secretary), &c.—(*Communicated.*)

NEWPORT AND MONMOUTH B.K.A.

ANNUAL MEETING.

The annual meeting of the Newport and Monmouthshire Bee-keepers' Association was held on Friday evening, March 17, at Victoria-chambers, Bridge-street, when the Right Hon. Lord Tredegar was re-elected as President, and the following gentlemen Vice-Presidents : The Right Hon. Lord Llangattock; D. A. Thomas, Esq., M P. ; A. Spicer, Esq., M.P. ; Wm. Graham, Esq. ; J. R. Richards, Esq. ; and Dr. Rutherfoord Harris. The Executive Committee for the year 1899 comprises the following gentlemen : Mr. J. M. Wood, Mr. Sayce, Mr. F. Williams, Mr. C. H. Hale, Mr. G. Greenway, Mr. A. Birt, Mr. Hooper, and Mr. Culverwell. The Hon. Treasurer (Mr. A. G. S. Batchelor) and the Secretary (Mr. J. Stream) were also re-elected. It was resolved to subscribe one guinea to the Newport Horticultural Show, and to offer the same prizes for honey as last year, and under the same conditions. The Secretary reported that eleven new members joined the Association in 1898, bringing the total membership up to forty-five.—(*Communicated.*)

FOUL BROOD (*Bacillus alvei*).

AN INVESTIGATION INTO ITS NATURE.

By Henry W. Brice

It is now some ten years since I first became acquainted with the bee-disease known as foul brood, or *Bacillus alvei*, during my peregrinations amongst bee-keepers in Kent, Sussex, and Surrey. I was at the time much impressed by the infectious nature of the disease and its wide dissemination, which subsequent investigation and personal experience—especially since my connection with the Kent and Sussex B.K.A. as hon. secretary—has fully confirmed. The first impressions then formed, and the subsequent enlightenment that followed, have clearly proved to me its general existence among bees, not only in this country, but in a more or less degree over the whole world. I have naturally gone to the authorities of past days for information, but although I found that a great deal had been written on the subject, there was no solid satisfaction so long as a feeling of uncertainty existed in my mind as to the perfect accuracy or the correctness of some of the statements made. Actuated thus by a desire to search out for myself, I was led during the late winter to institute and carry out an investigation on my own account.

Referring to the work of the late Mr. F. R. Cheshire, "Bees and Bee-keeping," as containing practically the only information on the subject of an exhaustive nature, I confess to not a little disappointment at the many errors or defects therein ; defects which misled me in the early part of my work, besides giving an infinity of unnecessary trouble. No doubt many of what are now proved to be errors were due to the fact that Cheshire's work was written some fifteen years ago, when bacteriology was in a comparatively embryonic stage.

The author, no doubt, so far as he was able, found matters as therein described ; but his slight knowledge as to number of adventitious organisms is especially noticeable on page 574. The statement on page 540 as to detecting the disease with an ½-in. or even a ¼-in. objective is also misleading. Disease may exist, and although a practised microscopist may find some trace by means of a ¼-in. objective with a powerful ocular (not known in 1885) yet nothing would be seen with an ½-in., no matter how long one may search for it. The mention on page 539 as to the characteristic odour of foul brood is also unreliable, because of the frequency when no smell is perceptible in diseased stocks of bees. Matters, however, have advanced since those days, and we no longer fly to the ink-pot when it is desired to dye a specimen ; we now know that by such methods reliable results will never be obtained. Thus it was that the many difficulties which constantly arose in the early stages of my experimental work fully convinced me of the necessity for becoming acquainted with the common organisms likely to interfere with the correctness of any deductions made. I should thus be able to differentiate without any uncertainty between them. This was not a very difficult task, as I fortunately possessed a fair general idea of the natural forces at work in the economy of nature in this direction, and it therefore became only necessary to take into consideration such forms of germs as might be found in the air and water, and from among these select only such as appeared from their nature and morphology to bear a relationship, under varying conditions, to *B. alvei.*

It is only fair to say that the author of "Bees and Bee-keeping" laboured under one very great disadvantage in having to rely upon drawings for his illustrations without the invaluable help of micro-photography. Nor were

the lenses used with the microscope fifteen years ago anything like so perfect as those in use now. The apochromatic objective and compensating oculars were not known at the time he wrote, and in addition great advance has recently been made in the methods of staining, &c., I propose, therefore, in order to make this article as exhaustive and comprehensive as possible, to first describe the apparatus necessary for the work and then deal with the subject under the following heads: 1. Media; how to prepare and use the same. 2. Dyes and stains, agents and *re*-agents. 3. Cultivation of *Bacillus alvei*, its isolation and identification. 4. Preparing and mounting microscopic slides. 5. Adventitious organisms and their detection. 6. Antiseptics and germicides. 7. Treatment of bees and hives; and 8. General considerations.

growth, and for general purposes, and should not be omitted from the outfit. With regard to oculars, four of these are necessary, viz., Nos. 1, 2, 5 (Continental denominations), or an A, B, and D (English sizes), having approximately an auxiliary magnification of 3, 4, and 9 diameters respectively. These cost about 7s. 6d. each. In addition to the above, an achromatic compensating eyepiece or ocular is a great advantage; the auxiliary magnification of these are, according to requirements, from 1 to 27 diameters, and they are sold at 30s. each. If it is intended to place on permanent record the results obtained, a good photographic outfit is necessary, costing probably £3 to £5 further. The total cost of the microscopic outfit, including slips, cover glasses, dyes, oils, &c., will be about £20, and the various photographic appliances,

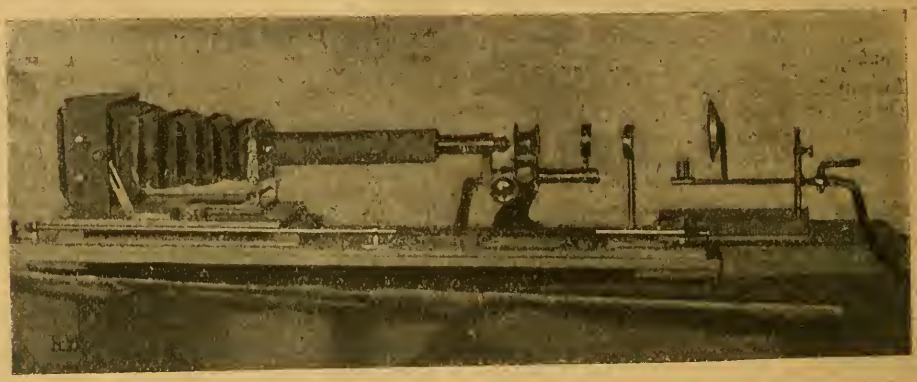


Fig. 1.

Apparatus.—The most important item here is, of course, the microscope, which should be as simple in form as possible, consistent with efficiency. The stand need not be costly; that known as a sliding tube "coarse adjustment" may possibly answer, but for reliable work that with the "*fine adjustment*" is far the best. The next requisite is a sub-stage condensor or illuminator, an achromatic "abbe" is the best form, no doubt, but Messrs. Baker & Co., of High Holborn, supply an excellent modification of this at one quarter the price, and it is quite suitable for a student's microscope. An ordinary bullseye condenser and a good lamp are also necessary. The objectives and oculars or eyepieces come next in order, and I may here say that a $\frac{1}{12}$-in. oil immersion is absolutely indispensable; and the one above mentioned gives an initial magnification of 125 diameter with a numerical aperture of 1·30. This will cost £5. A $\frac{1}{8}$-in. dry or $\frac{1}{10}$-in. water immersion costs less than the former and may be made to serve the purpose, but the initial magnification is much less, viz., 83 and 100 diameter respectively. One of the above and a good 1-in. and $\frac{1}{4}$-in. are useful for studying the formation of colonies, masses of

plates, chemicals, &c., will amount to about another £6. The illustration (Fig. 1) shows the apparatus used by myself in making the photographic slides which illustrate this article (A) is the camera; (B) a tube, with collar to lengthen out the appliance when necessary; (C) focussing arrangement, actuated by rod; (D) the microscope, comprising, in addition to usual parts of sub-stage condenser, frame for carrying coloured glasses and bull's-eye condenser; (E) the illuminating apparatus, with double burners, reflectors, and adjusting arrangements. The whole is mounted on a base, to which the microscope is clamped, the camera being fixed to a sliding stage. By this means one is able to photograph any magnification with a $\frac{1}{12}$ oil objective and a No. 1 compensating ocular, from 500 to 3,000 diameters.

In addition to the foregoing, a pair of platinum needles will be required, three or four glass rods, forceps, glass pipettes, test tubes, cotton wool for plugs, a supply of agar-agar, gelatine, litmus, Canada balsam in benzole, alcohol, &c., which will be dealt with in due course.

It will also be necessary to have the means

of sterilising the various tubes, wool, and appliances, and for cultivating the growths at various temperatures. For the first the kitchen oven, if the temperature is raised above 300 deg. Fahr., or about 140 deg. C., can be requisitioned on occasions; and for the latter purpose a cupboard next the kitchen range, giving a fairly even temperature of from 60 deg. to 80 deg. Fahr., or 25 deg. C., will answer, and for the higher necessary temperature of 98 deg. to 110 deg. Fahr., or 40 deg. C., a special chamber must be made. For this purpose: a square 28 lb. honey tin answers well, and the temperature kept even by a paraffin lamp placed beneath it, the tin to have a false bottom to allow an air space between the bottom of tin and the vessels containing the cultures.

Media and their Uses.—A matter of great importance is the careful preparation of the various culture media, as, although the disease can with almost certainty be detected in an infected comb, there are a good many conditions under which the disease may be present in a hive; and without a means to cultivate it, the same may lay dormant, or exist in the bodies of the bees, for months, and then reappear; and again, it is only by cultivation that we can mark its special features, nature, and conditions of its life history.

Wiesmann propounded a theory on the immortality of these micro-organisms which declared that, setting aside accidents, they are really immortal; and although the rods break or split, and spore, still there is no death, because the older growth, while disappearing, leaves a large succession of young vigorous unicellular progeny to take its place. Considering also that in suitable media two generations can be raised in an hour; or bearing in mind that from one single parent 336 generations come into existence in a week, and each generation as it appears keep up individually the same rate of progression, we can see that at the end of a week the numbers to which they attain in the aggregate is almost beyond belief; and when we contemplate that each tiny portion of media (affected with the disease) not larger than a small pin's head, contains many thousands of individuals carrying on the same rapid reproduction, we can but marvel! In order, therefore, to study the morphology of microbes or germs, very careful cultures are necessary. In the case of dead or decaying matter nature has provided perfect media embodying all the necessary elements, and were it not for micro-organisms the earth would be surcharged with fœtid waste rendering existence entirely different to what it now is. The theory has been put forward that decaying matter causes spontaneous germination of these organisms. Recent investigations, however, clearly show that this is not so; and, moreover, means are now adopted to sterilise our media and vessels containing the same, which, if boiled for a sufficient period and the access of air prevented, no germinal growth or putrefaction can possibly take place. The reason for this is (and the point has a great bearing on the treatment of diseased stocks of bees and hives) that, if a substance containing bacteria be boiled, all developed germs are destroyed, and if then left for twenty-four hours, and a suitable medium be present, the spores will germinate; then on boiling again, these are in turn destroyed, and if left for a like period a further number will be found to exist; the process of boiling must, therefore, be again repeated, until the medium is perfectly free. *No boiling alone will destroy the spores while they remain in that condition.* This I have proved entirely to my own satisfaction.

(*To be continued*).

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[3618.] The month of March has, in this district, been one long calm with no rough winds to shake the catkin's pollen into the nut blossoms, nor whip the fragile snowdrop's whiteness into a dirty brown. This anticyclonic period has been an advantage to the busy bee—whether foraging for pollen in the crocus and snowdrops or culling the early sweets from the forward palm, white arabis, and other early flowers—or labouring incessantly carrying in water to supply the growing needs of the increasing family in the brood-nest. The calm weather and bright sunshine has enabled the bees to work in comfort and with comparatively small loss of bee-life. The general opinion seems to be that breeding has commenced early this year, and consequently an extra run on the stores will result. No one at present, however, can tell if this early breeding will be of permanent benefit to the craft as a whole, or to any individual stock of bees; because, if the young bees are bred out of season they will be consumers only and not producers, seeing that they cannot gather honey from barren fields. Nor do I remember seeing the fields look more barren than now for several years at this time of the year; night-frosts have followed the warm sunny days, and have retarded the growth of vegetation and kept things backward. Those who live in fruit-growing districts should try and take advantage of the early breeding, as by judicious management they may secure not only early honey but also sweep the board in classes for honey of '99 at the early shows, such

as Royal Counties at Windsor, Essex Agricultural, and "Royal" show at Maidstone.

And so our dear friend, "Lordswood," has gone over to the great majority! How we shall miss those inimitable bits of word-painting with which he so frequently graced the pages of our JOURNAL. Nor shall so many of us get a grip of the hand that wielded the pen so gracefully, that wrote so lovingly of Nature and her offspring, the beautiful flowers. "Peace to his ashes." And I am sure I voice the feeling of all bee-keepers in hoping and trusting that his gentle spirit is where everlasting spring abides and flowers never fade.

The inventive Mr. Weed, of America, is busy making a new super foundation. This is thinner in the base of the cells; the wax is in the walls principally, and these walls are wedge-shaped; the product at present is only on sale in limited quantities. Messrs. Root say it is 10 ft. (super) to the pound. The object of the inventor is to make foundation as thin in the mid-rib as natural built store-combs, so that no pieces of wax may be left in the mouth when eating comb-honey.

Honey Imports.—The column of imports of foreign honey is interesting, and, I think, points to the fact that our industry, notwithstanding lower prices, must be growing. That bee-keeping is going ahead, that British honey and British bee-keepers are growing in favour with the British public, is patent to all observers. One cannot but notice, as one perambulates the large towns—whether on foot or 'bus or tram—that the number of shops which stock honey and display the same in conspicuous positions are increasing. And it is gratifying to note in passing that the old-time combination of "milk and honey" is still hand in hand. It is the dairyman who has taken hold of the honey trade.

Roll-call.—Every colony in my apiaries responded to the roll call last week. To a few I have given a cake of candy. No overhauling yet—"bide a wee."

Personal.—Since my last notes I have had an attack of influenza, and the "gude wife" is still in its grip and under the doctor's hands. This has interfered with both work and ink-slinging.—W. WOODLEY, *Beedon, Newbury.*

"ROYAL" PRIZE FUND.

THE "HAT" AGAIN!

[3619.] I am a bad beggar—that is to say, I dislike importuning friends, but what is one to do if first appeals fall short?

On Thursday evening, at our annual meeting in Jermyn-street, a lady tendered her second contribution to the fund, which I straightway put into a hat and sent on a voyage round the room. In a few moments I counted out fifty-five shillings and sixpence, although most had contributed previously moreover. I detected Mr. Morrell, the Woodstock M.P., dropping in a half sovereign, and our good friend, Mr. Walter F. Reid, a sovereign to swell the amount. As I know many of our friends have not yet contributed, and we are still a few pounds short of the desired total, I hope you will allow me to say that there is yet an opportunity for them to send a small sum in either stamps or postal order.—E. D. TILL, *Eynsford, March* 20.

CARBOLIC CLOTHS.

[3620.] Your correspondent, Mr. Kibble (3,615, p. 103), asks for opinions as to the use of carbolic cloths. As far as my experience goes, it does not hinder bees from going into sections, but I am quite sure that they needlessly irritate them, and I now never use them in manipulation. I find it far better to wring two or three unbleached calico quilts out in a solution of "Izal"—one tablespoonful to a pint of water—then quietly peel off the quilt, drawing the wet one on at the same time. Let it remain a minute, then gently lift it for general observation as to strength of bees, &c. They will be quietly at work and seem to take no notice. Then replace the wet quilt, and, taking another, proceed to uncover one frame at a time, covering those inspected with the second wet quilt so that none are exposed.

A hive can be gone through, I find, without either excitement or the hint of a sting; while, when I have used carbolic, the bees are all on angry buzz, seeming to say, "That nasty stuff frightens us so, we don't know what to do; but wait till we get our wits about us, and we'll pay you out"; and so they do! I have gone through my small apiary of six stocks, and not heard an impatient note, much less had a sting, from my dear little bees by the above method.—PSYCHE, *West Kerry, March* 18.

BEES AND LAUNDRESSES.

[3621.] Your correspondent, W. J. Worman, in B.B.J. for March 9 (3613, p. 95), says he had "never read of any bee-keeper coming in contact with a laundress." Both myself and my bees came in contact with a laundress neighbour a few years ago, and, as my hives were of necessity placed so near to my neighbour's doors as to be even a greater nuisance to me than to them (because of not being able to manipulate the bees when I wished or necessity required it), I hired ground purposely for an apiary away from the house. My experience, independent of the above, is that bees are a great nuisance to laundresses if placed so that the latter's drying-ground is directly in the bees' line of flight to and from their hives. The most difficult thing to remedy however, is the trouble and mischief caused when the bees have what we call "a grand turn out," *i.e.*, a good flight for cleansing purposes after having been confined by cold weather for weeks. The bees then fly in all directions. There are several ways of contributing towards a remedy for this trouble, some of which I

may here mention. If bees have not a good and *regular* supply of clean water near the hives, they are driven to suck the moisture from wet linen hung to dry ; indeed, I have seen them do this when a regular supply of water is quite near the hives. Bees fly towards the strongest light, the sun ; their food supply for the time being in an opening between the trees or houses.

If tall trees can be planted, or a light fence or trellis erected between the hives and the laundry, the bees must fly above the linen ; nor will many of them go that way if the climbing of the trees or high fence can be avoided by going through an opening in another direction. I think it would be possible to ascertain whether or no the bees that stain a certain laundress's linen with their excreta or with pollen are those of a particular bee-keeper, but the trouble that would be necessary to be able to swear that so-and-so's bees were the offenders is not very likely to be undertaken. If our bees cannot be kept without being a nuisance to neighbours, our bee-keeping is robbed of half its pleasure to ourselves. The now indispensable super-clearer does away with much of the trouble experienced in days gone by. But we shall always have the close of the harvest and the final "take" to reckon with. The gift of a nice piece of comb-honey now and again to the neighbours, especially when they have visitors staying in the house, helps them to bear the little troubles caused by bees, and even to take an interest in them. I find that a little of this sort of thing goes a long way. It doesn't pay to be at loggerheads with one's neighbours about bee-keeping. It is quite easy to lose a swarm worth 20s., which, if the bee-keeper had been on good terms with his neighbour, the latter would have prevented the loss by informing him of the swarm's whereabouts. How much more comfortable life would be if each and all considered the convenience of others.

Referring to your late esteemed correspondent, "Lordswood," just when I for one was looking for another contribution from his fertile pen, comes the sad news of his death. I believe the Editors' sorrow is shared by bee-keepers generally. Anything that lifts our minds and helps us to look at nature's and life's brighter side is both acceptable and helpful. May our loss be his gain.—W. LOVEDAY, *Hatfield Heath, Harlow, Essex, March* 20.

QUEENLESS STOCKS.

[3622.] Referring to 3617, page 104 last week's B.J.—How I envy Mr. C. A. Atchley in the possession of a hive with a queenless colony but containing brood at this early season ; and I dare say the majority of readers will try to make me out a very bad bee-keeper indeed, but nevertheless I wish I had one, for it is just from such a hive that Mr. Dickel says he has and can rear workers and even queens ! If Mr. Dickel can, why can't Mr. Atchley ? From eggs, commonly known to us as unfertile, laid in drone or worker's cells, from drone larvæ at any age, Mr. Dickel says he can successfully rear workers and queens ! Though the worker bee is supposed to have this power of sex determination, the worker can, according to Mr. Dickel, only rear "abnormal drones" from unfertile eggs. All this I have explained before, and beyond saying that soon we shall be able to dispense with the queen bee altogether (which will no doubt please Mr. Dickel very much), I will close by adding I only took this opportunity of such a grand case in point to point out the utter absurdity of the new "Dickel" theory.—H. HAMLYN-HARRIS, F.E.S., *Villa Rominger, Tubingen, Germany, March* 17.

PACKING SECTIONS FOR MARKET.

[3623.] If your correspondents, H. Patey and E. Charley (3593, p. 64, and 3607, p. 92), will ask their grocers for an empty "Borwick's Baking Powder box" (the one-gross packet size), I think they will find they have got exactly what they require. These boxes are obtainable for nothing (or next to nothing) at any grocer's, and are strong and light. They just hold half-a-dozen sections, leaving sufficient space all round for packing. All that requires to be done is to first put the sections in folding cardboard boxes (I always do this, although it may not be necessary), place them in the box, pack screwed-up paper round them to keep them tight, and label the parcel "fragile." I have sent sections in this way both by rail and parcel post, and I have never heard of them arriving at their destination otherwise than in a perfect condition.—B. W. ATTLEE, *London, S.W., March* 14.

HERBERT J. SANDS.

("LORDSWOOD.")

(*Continued from page* 103.)

The appreciatory letter of "Wold Bee" in our issue of May 20, 1897, headed "A Jubilee Holiday," and referring to "Lordswood," gave us the opportunity to mention in a footnote the fact of our never having seen either "Lordswood" or his bee-garden at that date. Moreover, we inserted a characteristic letter we had previously received from him in response to our request for a photo of his bees for inclusion in our "Homes of the Honey Bee." The letter is so good as to be worth reproducing here. He says :—

"I am afraid my bee-garden would make but a poor picture compared to friend Woodley's (or Walton's) goodly show. It

would, perhaps, compare more favourably with Dr. Sharp's; for before having it taken I would remove the old sardine-tins filled with stones, old brick-ends, &c. (!) with which that gentleman, and I myself, sometimes, weight down the roofs! There is much of a muchness in the appearance of present-day apiaries, for the frame-hive has ousted our old skeps, Stewartons, and that hive which was going to revolutionise bee-keeping!—what was the name of it?—the 'Anglo-Cyprian,' I think. I have ten hives on one side of my lawn, and ten on the other. Now the difficulty is to photo the whole lot so that all may be seen (if so that they look like thirty hives so much the better!) I took a snap-shot at them last year, and it seems in the resulting photograph that there are only six or seven hives altogether, which is very disappointing. Again, the camera is too truthful! I want to get in my hives, but *not* my sister's fowl-pen nor my brother's guinea-pig ranch. I want to let my favourite apple-trees appear, but not the old stumps to which Sarah Jane attaches the clothes-line! Cameras are very truthful, but at the same time are very great at glossing things over. They will make Devonshire lanes with very little material! Perhaps by a judicious arrangement of boughs cut from trees, &c., I may be able to make an old bee-shed (with *corrugated iron* roof) look like an old arbour, with everything else in keeping. I will try, and if successful will send it on to you, and shall feel at least six inches taller if I see it figuring amongst the 'Homes of the Honey Bee!'"

Much to out regret, the "picture" never came, though it was, we know, fully intended that "some day" he would "get out his camera" for us. The regret we now feel at missing the promised photo is intensified on learning from his family since our friend's death that no portrait of any kind exists, though we are told he had lately promised that he "would have one done as soon as he could find time." There is, however, a faint chance of our one day having a snap-shot photo with "Lordswood" in it, because during the "Royal" show week at Birmingham last year—where both Editors of this journal were officially engaged—Mr. Cowan and the writer accepted a quiet but very cordial invitation to spend a day at Rednal Cottage with our friend; anent which visit we will say a word later. While there, we, after a good deal of persuasion, induced our host to take his stand in a snap-shot view of the cottage which Mr. Cowan took. The result was, we fear, not very satisfactory, for no mention has since been made of it. But we have written our senior in California, and may be quite sure that if the negative is still available, we shall have a print of it. We are also endeavouring to get a view of "Lordswood's" bee-garden, and if successful it will take its place among the "Homes of the Honey Bee."

Referring to his removal to Rednal Cottage last year we got the following letter:—

"March 5, 1898.

"Many thanks for your letter. I had a good laugh at your dream. No wonder you dreamt! I hope you have torn that last letter of mine up, as it was written when I was laid low with various complaints. Don't be afraid. I am not a vegetarian! I like a bit off the breast of a pheasant as well as any one. I am a teetotaller, though, or rather a water, milk, and cocoatotaller; but there are reasons for this that will not bear investigation. Why rake up the things that are best buried? I am writing in a hurry to tell you that, after being on the look-out for a house for years, I have suddenly found a cottage in the country, and shall try and get there at end of this month. It would be a tremendous undertaking to remove all my own and my father's and mother's lumber (we have been rare collectors, furnitureologists, or whatever you like to call it, for many years—myself for fifteen years, my parents for fifty!), so please excuse the total eclipse of myself which is going to take place. Furniture one can sell and pile up in coachhouses, lofts, &c., and the job is soon over; but to remove 2,000 kinds of plants (there is about two acres of garden where I am going), not of each kind, but a dozen of most and a hundred of some and a thousand of a few such as daffodils! Think of the labour!

"It is a charming spot where I am going to migrate to. Lies right away by itself in the meadows; grass all around. Windows won't want cleaning, curtains won't want washing but once in two years. Think of it! Hills (with bilberry and ling) in front of you; hills to the left of you, hills to the right of you, fields all around you. Can see the sky all around, and the sun rise direct from the horizon (I believe we can see Kent), Brummagem ten miles away! I shall only sleep there, it is true, and shall drag myself away wearily on summer mornings, but how one will look forward to the evenings to get away to it from the smoke and noise and dust and shops and people! But the thoughts of removing—so many millstones have we hanging round our necks—pianos, bookcases, tables, chests of drawers, cheffoniers, beds, &c., &c.—makes me that I can't sleep o'nights thinking of it. Obliged to take sleeping draughts and cooling medicines. If it were not for my father and mother I would like to have an auctioneer in, and clear right out except a razor, a piece of soap, a towel, and a pair of boots. What does man want more? Except, of course, the B.B.J. and his bees. I shall trot you down there in June by sheer force, if necessary.—I remain, ever remembering your kindness and consideration, H. J. Sands."

A brief but characteristic note, written after a slightly laudatory reference to himself in our pages, affords another instance of his dislike

to any undue prominence in print. He says :—

"Dear Mr. Carr,—I wish you would not say what you do about me in the B.J.! You do not know what a poor, miserable, lone lorn Mrs. Gummidge sort of creature I am! I feel that I am the most to blame though calling myself, forsooth, 'Lordswood,' and writing as though I were a landed proprietor or a member of the aristocracy; whereas, the fact is, I have been trying to get half an acre of my own all my life, and have not succeeded yet! Fifteen years torn out of my life through going into town life. I hate the very name of towns! I did, at one time, have some regard for my fellow-beings, but of late years I have lost all my childish faith and trust and confidence in them. And even the country life about here is not much better now. A large brewer has bought the public-houses and turned them into palaces, and now he drives round in an evening and treats everyone who happens to be in the house. So the agricultural labourers now may be seen staggering home at all hours of the night! What has come to the folks, I don't know. Their surroundings, so sweet and pure and bright, and yet in the men there is this accursed love of intoxicating liquor, and in the women that terrible stagnation of intellect that makes them little better than the wild animals. Well might Khama, the African chief, exclaim: 'I dread the white man's drink more than all the assegais of my enemies.'

"I have sent you a bit of moss, bilberry, hazel, and alder catkins by to-night's post, just to give you a whiff of the country."

(*To be continued.*)

METEOROLOGICAL

Observations taken at Duddington, Stamford, Northants, for the Week ending March 18, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Mar. 12....	30·35	48·5	60	42	18	50·7	—
,, 13....	30·53	40·0	60	31	29	45·1	—
,, 14....	30·51	46·0	59	36	23	47·2	—
,, 15....	30·43	34·1	58	27	31	42·0	—
,, 16....	30·39	35·0	55	29	26	41·6	—
,, 17....	30·40	38·8	48	33	15	40·3	—
,, 18....	30·14	40·8	45	33	12	38·8	—
Means	30·39	40·4	55·0	33·0	22·0	43·7	—*

* Total, nil.

Mean vapour tension, 0·219 in.; mean relative humidity, 86 per cent.; mean temp. of the dew point, 36°·5. For the week ending March 11, the rainfall, viz., ·22 in., was −·06 in., and the mean temp., viz., 39°·6, was −0°·7. On the 9th, the rainfall should have read ·01 in. (not ·10 in.). The mean temp., February 26 to March 11, viz., 38°·2, is −1°·9, and the rainfall, viz., ·22 in., −·34 in. The mean temp., January 1 to March 11, viz., 40°·2, is +2°·1, and the rainfall, viz., 4·42 in., +·41 in.

Fred. Coventry.

Duddington, Stamford, March 20, 1899.

Queries and Replies.

[2179.] *Size of Hives.*—1. Do you consider a hive with single walls, but with a dummy each side, equal to one with a double wall? as I might not find that easy to fix in neatly. 2. Will a twelve-frame hive—as seen in some dealers' catalogues—yield better honey results than one taking only ten frames? You could, of course, give more room, and perhaps thereby lessen swarming with a larger number of frames. 3. In using a ten-frame hive before you put supers on what should be the average number of combs occupied by bees (or how many seams of bees)?—H. J. Guest, *King's Norton, March* 18.

Reply.—1. A single-walled hive cannot, for obvious reasons, be regarded as equally efficient with a double-walled one. At the same time we freely grant that good results are got by some bee-keepers who use single walls only. 2. No; at least not in our opinion. 3. The bees should fully occupy all but the outside frames before putting on supers.

[2180.] *Moving Bees* 700 *yards.*—I should be much obliged if you would answer the following in next issue of the Bee Journal. 1. How am I to remove my hives to a new location about 700 yards distant from the old stand, and what would be the most suitable season for moving? 2. What would be the best way of getting a swarm of bees out of the trunk of a tree, and the best time of year for operating? 3. How can I get the bees to seal up the sections when full? Last year a great many sections were only partially sealed, although they were left on quite long enough. —H. Stewart, *Co. Donegal, March* 16.

Reply.—1. The bees should be moved at once, and means taken to alter the appearance of hive-entrances as much as possible till the bees have become used to the new location. 2. We can only refer you to the experiences in this line so often recorded in our pages. The best season for moving is early autumn. 3. By keeping racks as warmly wrapped as possible. After the season is over, no care will enable the bee-keeper to get sections sealed.

[2181.] *Bees Disappearing from Hive.*—Many thanks for kind reply to my queries (2176, p. 108) in this week's B.B.J. There was, however, one little misunderstanding—probably owing to careless punctuation on my part, at least so says my wife. I meant to say, when I examined the hive on the 31st I found several queen-cells, but *every one* was empty. There was no after swarm. Since writing last week I have had another puzzle. Last autumn I united two driven lots of bees in one skep. I gave them syrup as long as they would take it—over 20 lb. At the beginning of this month I saw a lot of fighting

among the bees, and particles of wax scattered about. I therefore reduced the width of entrance so that there was but room for bees to enter in single file. On Wednesday there were plenty of bees about, but on Thursday noon I examined and found every live bee vanished, and but a very few dead ones on the floor-board. The original skep is full of clean, worked-out combs, but no honey, and a little brood which I cannot understand. I am sending you a sample comb by same post, and should be exceedingly pleased if you can help me to an explanation?—J. S., *Downham, March* 18.

REPLY.—The probability is that some mishap to queen has occurred last autumn. The few dead larvæ in cells have been chilled some months ago, and the bees being queenless were attacked and robbed of their stores. Many of the living bees—if there really was many—will have joined the plundering bees in the hives of the latter.

Bee Shows to Come.

June 5 to 8 at Windsor.—Bee and Honey Show in connection with the Royal Counties Agricultural Society. Several classes for past season's honey. Schedules from A. D. Woodley, Hon. Sec. Berks B.K.A., 17, Market-place, Reading.

June 9 and 10 at Epping.—Show of Bees, Honey, and Appliances in connection with the Essex Agricultural Society. Schedules from Mr. G. F. Offlahertie, Monghyr Cottage, Loughton, Essex. **Entries close May 17.**

June 19 to 23 at Maidstone.—"Royal" Agricultural Society's Show. Bee and Honey Section under management of the B.B.K.A. Schedules from E. H. Young, Sec. B.B.K.A., 12, Hanover-square, London, W. **Entries close May 1.**

September 6 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 30.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

J. A. NICHOL (Walthamstow).—*Leyton as a Bee District.—Bringing Bees from Cumberland to London.*—1. We are not sufficiently acquainted with the district mentioned to venture an opinion whether bees would succeed there or not. Perhaps some reader dwelling near "Lea Bridge" will kindly send us a line of reply. 2. If bees are carefully packed and in hives suitable for transit, they would travel well to London; but it would be safer and cheaper to sell the bees at home and buy here.

GOXHILL (Hull).—*Foul Combs in Hives.*—There can be only one opinion regarding the piece of foul-smelling comb received, viz., that all such should be promptly burnt. How the death of bees was brought about we cannot say. Those in comb might have been drowned through a leaky hive-roof, judging by the appearance, but they have evidently been dead for some months. There may be foul brood in some of the combs, though none appears in sample, which *we* had burnt without any delay.

BEES, G. (Glos)—*Suspected Foul Brood.*—Before expressing an opinion, a sample of comb containing dead brood should be sent. Dead dried-up bees do not help us in diagnosing foul brood.

F. J. K. (Sheffield).—*Flour-Candy Making.* Before expressing an opinion on sample of candy sent, we should know of what it consists and the quantities used in making. We cannot, however, for a moment believe that it was made from recipe in "Guide Book." The latter reads:—To 6 lb. *white lump* cane sugar add one pint of water, &c." It also directs that when the mixture has been boiled sufficiently long it is removed from the fire and, while lukewarm, is stirred "until it turns white and begins to set." We shall be glad to know if all this has been attended to?

D. H. (Oxon).—*Bee-garden Pictures.*—We will be glad to receive photo of your father's apiary at Vancouver, British Columbia, and if suitable will have it engraved for our pictures of bee-gardens.

G. SPEARMAN (Glos.).—*Painting Hive Entrances Different Colours.—Planting for Bees.*—1. The object of painting hive entrances in different colours is to assist queens to distinguish their own hive on returning from their mating flight. With "full 4 ft. between each hive" there is no danger to worker bees. And with so many as forty "Wells" hives in a single row the space occupied seems long enough in all conscience. 2. The ground in front of the hives could be advantageously planted with limnanthes, mignonette, wallflowers, and borage, with a good patch of white arabis for the early season. 3. We do not advise keeping queens imprisoned for future use more than a week or ten days. Beyond that time we should keep them in a nucleus hive and allow free flight to the bees. 4. If you intend exhibiting this season, attend the early shows and note the kind of honey to which the best prizes are given. That is the most effectual lesson in "showing." Thanks for your good wishes and appreciation of B.B.J.

C. E. G. (Colchester).—*Soft Candy for Spring Use.*—Candy like sample sent is admirably suitable for bee-food at this season.

*** *Pressure on our space this week compels us to hold over several communications already in type, including "Curious Notes about Bees," "The Coming Bee Season," "A Swarm in March," "A Peculiar Bee Experience," and several Queries, together with notice of "Trade Catalogues Received."*

Editorial, Notices, &c.

BRITISH BEEKEEPERS' ASSOCIATION

CONVERSAZIONE.

On the conclusion of the business of the annual meeting at 105, Jermyn-street last week, the members re-assembled at six o'clock, and, after the usual interval for refreshment, Mr. E. D. Till (Vice-Chairman B.B.K.A.) was voted to the chair. Among those present were :—Hon. and Rev. Henry Bligh, Rev. W. E. Burkitt, Major Fair, Messrs. R. Alder, E. Belsham, T. Bevan, R. C. Blundell, C. Bontoft, W. Broughton Carr, J. S. Greenhill, W. H. Harris, J. Helsby, J. M. Hooker, Jas. Lee, R. Lee, W. P. Meadows, J. H. New, G. F. O'Fflahertie, W. F. Reid, W. J. Sheppard, E. H. Taylor, Ernest Walker, F. B. White, F. H. White, J. Willard, E. H. Young. The Chairman read a letter from Mr. A. C. Sewell of Durban, South Africa, acknowledging safe receipt of seeds of honey-producing plants. It was Mr. Sewell who some time ago sent Mr. Till a jar of honey packed in bamboo-cane.

A sample of what was termed "Californian honey" left by Mr. Scattergood was passed round for inspection and "tasting." There was great diversity of opinion amongst those present as to its genuineness or otherwise. In the end it was proposed to settle the varying opinions by a show of hands, when six voted it pure honey and seventeen as a mixture of "honey and something else." The sample was eventually handed to Mr. O'Fflahertie, who undertook to get it analysed. By way of introducing a discussion on the question of making British honey a decorative article in the shop windows of those who desire to display such, and also assist in rendering it attractive to general purchasers, Mr. Carr showed various articles, some of which had been sent to the BEE JOURNAL Office, and others got for the purpose. Among them were several glass honey-jars with various kinds of screw-caps designed to prevent leakage and do away with the fault of "stickiness" in handling. Among the latter were the "Jubilee" bottle, with "Hill's patent lock-vacuum" (sent by Messrs. T. B. Blow & Co.), and a small jar with a hard nickel screw-cap. The general opinion was strongly in favour of a hard cap in preference to the soft ones usually sent out ; both the jars mentioned having hard and effective caps, and were approved of by the meeting.

The articles shown also included an enamelled tin jar suitable for honey (on the self-closing lid principle), very attractively decorated in gold and colours seemingly printed on the tin. This jar was much admired by those present, and it was suggested that the "county label" of any B.K.A. choosing to adopt it for use of members might be printed on the lid of tin. Mr. W. P. Meadows, speaking as a manufacturer, said there would be no difficulty in supplying honey-tins decorated as the sample before them if an adequate demand would justify the first expense in preparing such. Mr. Meadows also referred to the impression among some that tin had a deleterious effect on honey, and said there was no such effect whatever, provided ordinarily good tin was used. The "terne metal" so often mentioned was a cheap tin used chiefly for lining packing-cases to render them watertight.

Some stout paper bags with convenient handles of strong tape attached were also shown by Mr. Carr, and considered very suitable for handing with jars or sections of honey to purchasers at shows and over shop counters. These latter were sent to the B. J. office by Mr. C. Redshaw, South Wigston. Celluloid quilts, queen excluders, and feeding stages were shown by Mr. Walter F. Reid and by Mr. Greenhill. Those exhibited by Mr. Reid were of his own perforating (excluders and feeding stages), and were simply made for his own use, and not manufactured for trade purposes, as he jocosely explained. In reply to a question as to the advantage, if any, of celluloid over zinc for queen excluders, especially considering the extra cost of the latter, Mr. Reid had clearly demonstrated by experiment that the advantage was undoubted, because celluloid was a non-conductor ; consequently there was less lowering of the temperature in brood-nest or surplus chamber with a sheet of celluloid between than when the same superficial surface of zinc was used.

A method of embedding foundation in "wired" frames by sending through the wires a current of electricity was explained by Mr. Reid and caused considerable interest. The same gentleman also brought for inspection samples of "bee-proof" thread, coated with "velvril," as mentioned in B.B.J. of February 2 last (page 43), which could be used successfully in place of wire in foundation-fixing.

Mr. Jas. Lee exhibited a small hive, which was practically a section, holding three frames fitted with section rack ; of a full-sized hive with standard frames, &c., which was thought would prove especially suitable for lecturers, on account of its portability. The hive shown was an exact duplicate of one made by Messrs. Lee & Son to the order of a bee-keeping schoolmaster, who needed it for lecturing and technical instruction purposes, for which it was thought very well adapted by all present. A very curious earthenware bee-smoker, in the form of a human foot, perforated with holes at the toes, used by the native bee-keepers of North Africa, was shown by Mr. Carr, who also exhibited and explained the use of a spiral spring cage of American origin, designed for confining queens during the process of wing clipping. By the means of this cage it was shown that the "clipping" could be done without touching the queen by the hand at all. Mr. Reid said that if a similar con-

trivance were used for placing two queens face to face it would be found that they would protrude their stings in their desire to wage battle one with the other; the stings might then be cut away, after which they would live together in one hive in the performance of their natural functions, &c. Mr. Meadows considered that the cage shown by Mr. Carr would be very useful for removing queens from combs without handling, and as Mr. Carr approved of the idea, he passed the cage over to Mr. Meadows as "not patented," so that he might make them for sale if he cared to do so. The Conversazione was of much interest, and terminated with a vote of thanks to the genial Chairman.

FOUL BROOD (*Bacillus alvei*).

AN INVESTIGATION INTO ITS NATURE.

By Henry W. Brice.

(*Continued from page* 115.)

Up to the present little or nothing was known of the germ-cell; it is a structureless, transparent, moving organism with a single cell, and is actuated by what are termed the flagella. That *B. alvei* is really a cell is proved by its rapid colouration by means of the dyes in use, which, when added to the fluids in which they exist, is absorbed, and the colour retained within the organism. I have not yet seen the flagella of *B. alvei*, but that they exist is beyond doubt, because the active mobility of the creature clearly indicates their presence. They are fine threadlike appurtenances affixed to one end of the organism, and are exceedingly thin and long, even when compared with the germ; they are also perfectly transparent and most difficult to dye. I have little doubt, however, of finding them eventually, but researches in this direction require the gift of patience.

B. alvei, being a living mobile organism, requires a nutritive element to support its life and reproduce its kind, and these elements must be given in water. But water alone will not support them, nor will spores germinate therein; a medium of some sort must be present to produce bacterial life. Proper or sufficiently high temperature, too, is an essential, 60 to 80 deg. Fahr. being most favourable to cultivation and existence; and, with regard to *B. alvei*, at 45 deg. growth ceases and spores are formed. Cold will not destroy these. At 98 to 104 deg. Fahr. growth also ceases, and spores are rapidly formed. The foul-brood bacilli are killed at 158 deg. Fahr., and, after twenty-four hours at this temperature, if spores are not present, no cultivation can be obtained. This I have ascertained by repeated experiments.

When cultivating *B. alvei*, all foreign substances inimical to that particular form of germ life must be got rid of, or success becomes impossible. Air is also necessary to all growths, as is proved by shutting out or exhausting the oxygen from tubes and plates containing them. Under this condition the operator will find that life at once ceases and all growth is at once arrested. *B. alvei* may therefore be termed entirely *aërobic*.

A further and not less important fact which may eventually be turned to account in dealing with foul brood, lies in the conditions laid down by Koch in the cultivation of germs. He says:—"The organism must be met with in the tissues, fluids, or organs of the animal affected with, or dead from, the disease," and "the organism must be isolated and cultivated outside the body on suitable media for successive generations," and must produce the same organisms as were found in the original. This I have carried out by cultivating *B. alvei* through six independent cultures, the result showing germs in the final product identical with that taken (1) from the combs, (2) from queen, and (3) from worker bees—successive cultures from each source being secured.

All utensils and tubes must be first washed in soap and water, then rinsed and washed in dilute sulphuric acid, and then "ovened." This done, the cultivating tubes are then wrapped in white paper. The material to be used for plugs should be white medicated wool, and this too is kept carefully wrapped in white paper, keeping each parcel with the ends open, and not compressed, or the heat will not penetrate. Place in a hot oven for at least half an hour, and when it is seen that the paper is well scorched, the necessary temperature has been reached (about 300 deg. Fahr.). If a thermometer registering the required degrees be used, paper may be dispensed with. The tubes are now removed, and while hot plug all the test tubes with the medicated wool to about one inch deep. Now replace them in the oven for a like period, and when cool they are ready for use. All water used for the manufacture of "media" should be distilled and boiled for half an hour on three successive days and kept in closely-stoppered flasks.

Stock Broth.—For making the media used by myself, I take ½ lb. of lean fresh beef chopped up fine. This is placed in a glazed sterilized jar, covered with pure water and left to stand for twenty-four hours; it is then filtered into a clean vessel.

Agar-Agar.—Take a sufficient quantity of either "stick" or powdered agar (Japanese isinglass), soak in a flask of water for two hours and strain; add 2 per cent. of the agar to the "stock broth" before mentioned, along with two teaspoonfuls of chloride of sodium (table salt); place flask containing the mixture in a saucepan of water and boil for three-quarters of an hour until the agar is dissolved, (a pad of paper must he set in the bottom of the saucepan so as to surround the flask with water to prevent it from coming in contact with the metal). A saturated solution of carbonate of soda (washing soda will do) is then added gradually to the now acid agar medium, which is then tested with litmus paper until it is

shown to be slightly alkaline. Cool to 135 deg. Fahr., add the white of an egg and clarify in the usual way as for jellies, boiling for one-and-a-half hours, then filter. If not clear repeat the clarifying process.

Fig. 2.
Agar Tube-culture—24 hours.

Agar with Litmus.—This agent is necessary for testing the nature of the growth, because nearly every separate organism has its own characteristics on this medium, especially when testing for acidity or alkalinity. Use lump litmus or powder, and boil in pure water until a saturated solution is obtained, then add sufficient to the agar medium above mentioned to colour it a distinct purple.

Gelatine Medium.—Take 1 oz. of Nelson's No. 1 gelatine; cover it with a sufficient quantity of the stock broth mentioned above, and allow to soak for one hour; add one teaspoonful of chloride of sodium (salt), and boil until the gelatine is quite dissolved; then test as before, making the solution quite alkaline; cool, and clarify as above. This will require about 1½ hours' boiling (do not stir), then filter.

In using all or any of the above media (after filtration), a sufficient quantity of the liquor is is placed in the test tubes to fill about one-third of the tube, which is at once plugged down, and boiled for one hour on three consecutive days, allowing twenty-four hours to intervene between each boiling; then test again in order to ascertain that they have not become acid through the cooking process, but care must be taken not to keep the tube open a moment longer than possible. When the contents have properly set, the tubes are ready for inoculation. For this operation lay the tubes at an angle of 60 deg. to 70 deg. while the contents are getting "set." The medium will then lie along the tube and allow a greater surface for observation.

Potato Medium.—Good sound potatoes make an excellent culture medium for *B. alvei.* They should first be washed clean and dried. The inside is then cut into strips about 2½ in. long, narrowing to the top. Place the pieces in running water for an hour before using, then put a little sterilised cotton wool into the bottom of a test-tube together with sufficient distilled water to saturate the same. Now slip in the strip of potato and boil for an hour each day on three days as before mentioned, when cool it is ready for use.

The above are the media with which I have experimented and secured excellent and uniform results. The advantage of agar over gelatine is that the former remains solid at

Fig. 3.
Agar Tube-culture—4 days.

Fig. 4.—Agar Plate culture—2 days.

much higher temperatures than gelatine and does not liquify as the growth proceeds, which is the case with gelatine, the latter being almost useless when studying the growth of a culture. The illustrations shown are from photographs of growth on agar-agar, Figs. 2 and 3 being tubes and Fig. 4 a plate growth, which plate consists of a small glass box with close-fitting lid, into which a small quantity of the liquid medium is poured and sterilised as for tubes, allowed to set, and then inoculated in the ordinary way. The whole of the media above described are not only useful but necessary when it is desired to study the entire morphology of the bacilli under all and varying conditions. I say this much because the formation of colonies and the method of arrangement of the rods and spores are very dissimilar in each, though the character and characteristics are the same in all.

Before proceeding to describe the method of inoculating culture-tubes a few words are required regarding the conditions under which the work should be carried out. In my own work-room (or laboratory) a table is set apart for this particular study, having everything necessary ready to hand. A slab of marble (a portion of the table covered with American cloth without cracks will suffice) is needed—upon which all affected substances are manipulated—together with a basin containing a 25 per cent. solution of carbolic acid, into which the hands can be dipped as occasion requires. A cloth saturated with this solution should also be available in order to wipe the slab in the event of anything containing germs accidentally coming in contact with the work-bench. In fact it is absolutely necessary to carry out the work *under strictly antiseptic conditions*, and no precaution should be neglected which will tend to confine the germs to the tubes, plates, or slides under preparation or observation. A spirit-lamp is also required for almost constant use in sterilising and destroying the germs on (not in) the tubes, needles, cover-glasses, and slips.

(*To be continued.*)

HERBERT J. SANDS.

("LORDSWOOD.")

(*Continued from page* 119.)

Since we began what was intended to be a very brief obituary sketch of "Lordswood," several notes have reached us from readers expressive of the pleasure they are deriving from the perusal of our late friend's letters—letters which, as we have already said, were only the interchange of private correspondence, and never intended for print. They do, however, possess an interest which, if a melancholy one, is altogether pleasant, and since it is shared by many readers we have decided to extend this sketch somewhat beyond the limit originally intended. We are also very pleased to have secured a photo—specially taken a few days ago—of "Lordswood's" bee-garden, a reproduction of which is seen on p. 125. The spot was described last week in his own words as "a charming one, lies right away by itself in the meadows; grass all around." The gate above the hives leading to a neatly-kept cartway up the hill to the quiet country lane beyond, gives a good idea of the charming seclusion such a place would afford to so keen a lover of nature as Mr. Sands; but the heavy labour of moving no doubt severely tried the strength of one not over strong in body. A few words we got from him at the time is very characteristic. He says:—

"This moving business knocks me all of a heap. What with bees (fifteen hives and gear); what with sheds and fowl-pens and plants (1,000 in pots) and garden frames and the furniture (which some folks cling to with a tenacity as if they could take it to Heaven with 'em) and my ordinary business (that which brings in the bacon, boots, &c.), I am fairly in the thick of it, but shall pull through all right in time. It is more the thought of it than anything else, for, by daylight, with six able-bodied men, horses and vans you can accomplish a lot—which is a bit Irish, isn't it? But doesn't it show how we go through life with a lot of millstones hanging round our necks?

"One of my ancestors must have been a gipsy. I always envy their mode of life so—always imagining what joy it would be to see an auctioneer hammering one's goods and chattels round the ankles of your neighbours as though they were chains."

And so when we look at the bee-garden it becomes easy to see that the bodily labour attending the removal, re-planting, and subsequent care of the rare and curious plants seen in thousands when, along with our senior, Mr. Cowan, we visited Rednal Cottage last year—no doubt caused the final arrangement and fixing up of the apiary to be deferred. We therefore see the hives bearing out our friend's description of its unreadiness for a photo when he says (page 118):—"Before having it taken I would remove the old sardine-tins filled with stones, old brick-ends, &c., with which Dr. Sharp and I myself sometimes weight down the roofs!" Yet we are glad to have the picture with, here and there, a brick-laden roof, although to us it bears about it the air of a spot whose owner has gone!

Our direct personal acquaintance with Mr. Sands was of the briefest, and although—as readers know—we stated in print that we had, up to May, 1897, never seen our friend, a few words in a note received not long after from him read thus:—

"Those were grand shows you used to have at Bowdon, in Cheshire! Your honey there used to make my hair stand on end! I was only a schoolboy then (about 1880) staying in

the locality with relations; but the sight of that honey and the Cheshire clover-fields is with me now. By my faith, even after what I have written, I must say *your* clover-fields run the Worcestershire clover-fields very close! Those bell-glasses weighing 80 lb.—but I must not go on like this!"

When we wrote next day expressing astonishment at what he knew of ourself and our early bee-keeping, a speedy reply came (full of humour) as follows:—

"DEAR MR. CARR,—Yes, I remember seeing you very well at the Bowdon shows, also those exhibits of yours! It was *bee-keeping* then! Not miserable 1-lb. sections of inch-thick comb, with the flavour of the wood tainting them to the core, but massive combs 3 in. thick in bell-glass and Pettigrew skep, and wooden super-combs that it were a luxury for you (I don't know whether the *consumer* would look at it in the same light!) to squeeze up in your hands and to feel the rich honey welling through your fingers! My certes, it was bee-keeping then! It is not real music nowadays—it is all barrel-organs! Give me the old German band and the old bell-glasses! Why, nowadays you put a patent 'super-clearer' under a rack of sections in the morning, and at dinner-time you lift it off and not a bee in it! whereas in the good old times one had to spend days watching for solitary bees (drones especially) to come out of the windings and intricacies of the bell-glass; when you had to be alert in flicking them off, or they would dodge back again into the dark depths—to say nothing of a desperate crew of cut-throat pirates from other hives trying to get 'aboard,' or rather aglass. Ah, we did see life in those days!"

We have already, on page 117, mentioned a letter from a correspondent ("Wold Bee"), which brought us a private note from Mr. Sands written in his pleasantest vein, we therefore reproduce it here.

"MY DEAR FRIEND,—Referring to the letter in BEE JOURNAL headed 'A Jubilee Holiday,' it gives me great pleasure to know that I have been able to fill some of the chinks in your readers' hearts by my writings. I take, however, little praise to myself, for it is more the result of accidental circumstance that enables me to detail my exploits in bee-keeping and my deep-rooted love of flowers, rather than of any set design or purpose of my own. For instance, it is quite possible I might still have been ignorant as to the difference between a sedum and a sempervivum, or between an elm or ash (as so many men are), if I had continued to live in the country amongst these things! But the fates took them from me and planked me down amongst bricks, mortar, and slates; amongst certain men, too, who had been cradled in the same room with these things, consequently who had

"LORDSWOOD'S" APIARY, REDNAL, WORCESTERSHIRE.

grown up with hearts of the texture, the hardness and the unfeelableness of bricks! I do not blame the men, but I do blame the circumstances that made such men. The fates took the green fields and Worcestershire lanes—with all the things that live there; the blue sky uncut in twain by chimney stacks—from me, and then I became hungry; the farther they seemed away, the thicker the smoke and fog, the more unendurable the dust; so much the more did the blue hills and green fields become magnets drawing me on!

"The fates were more kind, *i.e.*, considering their other treatment of me as cruel, in giving me a chance swarm (a most excellent swarm) in a hazel bush. For this I thank them on my knees. They were wine and oil to me when I lay severely wounded in the region of the heart, and no good Samaritan chanced by my way (although there were plenty of asses about!) And when the clouds hung round, perhaps for years at a time, it was the bees who pointed out where the silver lining lay.

"Thus, you see, I have no hand in shaping my destiny as a traveller across this giant globe hand in hand with my bees. As we go, so every night we right down in our diary of the things that we see by the wayside, of flowers, such as the globe thistle, the blue sea-holly, kingcups; of beasts, such as stags and rabbits, and our neighbour's goat; of mankind, Farmer Trampledaisy, Jack Bannell, Sarah Jane! And so will we continue to do, often tearing out leaves and sending them (they go very cheaply, two ounces of ideas for a halfpenny) to King William-street, until the editors and all the readers of the B.J.J. put up their hands and cry, like Hamlet, 'Hold! enough!'"

(To be continued.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

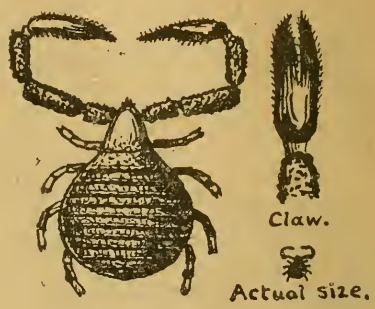
BEE PARASITES.

[3624.] Enclosed please find an insect, and I shall feel much obliged if you can tell me its name and any other particulars about it. I am sorry I can only send one specimen, but it is the only one I have found lately. At one time there were many in my hives, especially those stocks I procured out in the veld. I have not noticed that they do much mischief, except hanging to the legs of bees. I was informed that these were *braula cœca*, but in my opinion it does not agree with your illustrations. This looks exactly like a miniature crab, and carries its little claws in the same way.—E. T. Wells, *Queen's Town, Cape Colony, South Africa, February* 27, 1899.

[We forwarded the above to our esteemed correspondent Mr. F. W. L. Sladen, Ringwould, Dover, who has, at considerable trouble to himself, enabled us to supply the following information with the drawing which is here reproduced.—Eds.]

This strange looking creature is not, strictly speaking, an insect, but belongs to the class arachnida (spiders, &c.). I forwarded a sketch of it to Mr. R. I. Pocock, at the British Museum, with a request for some information concerning it, to which he kindly gave the following reply:—

"The sketch you sent this morning represents what I believe to be an undescribed species of *chelifer*. The chelifers constitute an order



of arachnida allied to spiders, scorpions, mites, &c. We have a few specimens of this species in the Museum, which came some years back from Natal. The trick of catching hold of the bee's legs is common to all the species of the group. Our English species, *C. canevoides*, for example, as well as other genera of the same group, may often be found hanging on to the legs of flies and *tipulæ*; others again in South America and elsewhere get under the elytra of large beetles. The reason for the habit is unknown, though perhaps it may be connected with the feeding habits of the chelifers, which devour mites and other small insect-like animals. I should say that they would inflict no damage upon the bees. They might conceivably destroy the eggs, but I do not think it likely. If they infest the hives, it is most likely in quest of parasitic mites and ticks."

The sketch appended will give the readers of the B.B.J. an idea of this extraordinary looking creature. It will be seen that it has eight legs, besides the pair of crab-like claws. The colour is reddish-brown. (*Braula cœca* has only six legs, and is a true insect of a low type).—F. W. L. Sladen.

WATER FOUNTAIN FOR BEES.

[3625.] To make a "fountain" for bees, which shall cost very little and be effective for the purpose, procure a glass bottle holding about a quart (mine is a champagne bottle), lay it on a bench with a cloth or canvas underneath. Get a small punch, old file, or bradawl. Now, at a place in the side, about ½ in. from bottom of bottle, knock a hole therein. Ah! you say, what a job? No, very easy. Simply put a punch where you want hole, tap gently with a small hammer while turning the punch round and round, in a few minutes the surface will chip away, and, by continuing to tap, in about five minutes you will find that a hole is formed. Now procure a large tin lid (the larger the better) which must have a rim higher than the top of hole in bottle when the latter is stood in it (mine is an old tea tray). Then get a piece of wood about ¾ thick and cut it roughly to shape of inside of rim of lid. Stand bottle on centre of this piece of wood, mark round it with pencil, then cut round mark, not too tightly. Now to use "fountain." Put wood in lid. Place finger over hole in bottle, fill the same with water, cork tightly, stand in lid. The water will run out of hole at bottom until it reaches the height of top of hole, it will then cease to flow, and will only run after this as soon as the water falls below this line. The bees rest on the wood float, and so there is no danger of their drowning, as to get at the water they have to put their "tongues" down at insides of lid. As the water shows through sides of bottle they very easily find this supply, especially if the whole concern is stood upon an inverted flower pot.—WILL. HAMPTON, *Richmond, March* 22.

THE "DICKEL" THEORY.

[3626.] To some of your readers I imagine the theory of Mr. Dickel—as given in B.B.J. of February 23, page 72—only corroborates the results of the advice given by yourselves, and commonly followed by your numerous readers. In other words, you say to such as ask advice:—"When a stock is found queenless give it a frame of brood which contains eggs." By doing this do we not ask the workers to determine the sex?

During my experience of re-queening, extending over many years, I have found the queenless bees treat the larvæ given in an inserted frame quite differently in the spring to what they do in the summer. In the spring, when there are no drones present in the queenless hive, one larva or egg is selected for the queen, the other larvæ and eggs as they advance to that stage (I refer to larvæ in not too advanced a stage) are reared as drones. We thus have the indiscriminate patches of drone-brood about the ordinary worker nest, peering above and enlarged from the worker-brood, and which your readers must have noticed when opening their hive to see how the expectant queen is progressing. On the other hand when the frame is inserted in the summer, with *drones present* in the queenless hive bred from a fertile queen, I have never known a drone reared from the eggs given to them in the worker cells.

It appears against nature to think that the queenless bees (with no drones present) would concentrate their thoughts entirely on their longed-for queen; and I therefore ask, what would she be to the queenless colony (for future increase) without any prospect of mating?

The initial stage of the mating takes place within the hive, as it has been my pleasure on two occasions to see them emerge from it.—H. J. SAMS, *Bath, March* 20.

[We confess ourselves unable to see other than the very faintest analogy between what we say to "such as ask advice," and the extraordinary theory put forward by Mr. Dickel. Nor do we think that many B.B.J. readers will agree with Mr. H. J. Sams in his conclusion. At the same time, we will gladly give insertion to opinions on the point. But we entirely dissent from Mr. Dickel's theory so far as we can understand it.—EDS.]

THE COMING BEE SEASON.

[3627.] I read with interest and pleasure the "Note from Devon" (3612, p. 94). The hopeful strain does one good, and I trust that with the bright sunny days we are now getting the dark, sad stories of black honey and honey dew are ended, and that hope for a better season will come and sweeten our lives and hearts once more.

Auspicious *Hope!* in thy sweet garden grow
Wreaths for each toil, a charm for every woe;
Won by thy sweets, in Nature's languid hour,
The way worn pilgrim seeks thy summer bower;
There, as the wild bee murmurs on the wing,
What peaceful dreams thy handmaid spirits bring.
What viewless forms the Æolian organ play,
And sweep the furrowed lines of anxious thought away.

So the poet sings, and so may not we catch the spirit of hope, and, like the bees, have begun merrily to hum and work, full of pleasure and hopeful desire to work out their Creator's plan, let us catch the same spirit too.

I like the manly way in which the writer of "A Note from Devon" speaks out about the *gentlemen* (?) bee-keepers who spoil the market for the struggling cottager by selling at underfoot prices. When will folk who are "up" consider those who are "down"? He says we shall never see "eye to eye" in this matter; still we can peg away, and as opportunity offiers, by precept and example, protest against these things, and never cease proclaiming against such conduct. This is truly an age of competition, and not merely of "the survival of the fittest," the motto of the many being, "Don't care who sinks so long as I swim." A man struggling hard to provide comforts for

his little ones has some excuse for driving hard bargains, and deserves every encouragement and help in the fight for bread; but he who is well provided for, and who never felt life's pinch, who—as an old book says—"has more than heart could wish," should be duty bound to consider his weak and less-favoured brother; and this notice of the matter in *B.J.* will influence some I have no doubt to reconsider their past doings in the line referred to, and, let us hope, amend their ways.

He's true to God who's true to man. . . . And they are slaves most base,
Whose love of right is for themselves, and not for all their race.

—JOHN KIBBLE, *Charlbury, Oxon.*

A SWARM IN MARCH.

[3628.] Will you be surprised to learn that the alarm was raised yesterday in our village of a hive having swarmed? The delighted owner sent at once for our local expert to gather the bees in. It was not a very large swarm, but surely it was an unusual occurrence at this time of year. The day is bright and balmy, and there is quite a joyful "boom" in our own apiary at the foot of the garden, facing south.

Kindly send me a schedule of the Royal Show to be held this year at Maidstone. I should like to exhibit some of my last year's honey, both run and in the comb, which are excellent in colour and flavour. I also hope to be able to add some of this year's produce to the list.

Honey has been selling very cheap in Cornwall during the past year, owing, perhaps, to the fact that honey was so poor in quality in most parts of England. Here, however, it seems to have been exceptionally fine, and I have kept back mine rather than sell it at the low current prices ruling at present.—E. H. C., *March* 15.

[The "swarm" referred to will have been what is known as a "hunger swarm," which is, of course, very different from a natural swarm. Referring to schedules for the "Royal" Show, it may save further inquiries in the same direction if we say that schedules can only be had from Mr. Edwin H. Young, Secretary B.B.K.A., 12, Hanover-square.—EDS.]

A CURIOUS RESULT

ATTRIBUTED TO SCRAPING HIVES.

[3629.] A neighbour of mine came to me about twelve months ago with his face swollen so that he could hardly see, and asked me what I thought was the matter with him. "I should say you have been stung," I replied. He assured me he had not, but that he had been scraping out and cleaning two bar-framed hives he had had given him, and thought the dust from the hives had caused the swelling and rash. However, he got better of that, but now, a week or two ago, when he was cleaning out his shed (where he had a year ago scraped the hives), he says he must have got some more of the dust into his face and arms again. Bu the has been much worse than before, for he has been treated by a doctor for a week. He never touched the hives on the second occasion. Is this not very curious?—F. W. MOREY, *Isle of Wight.*

[It is so "curious" that we cannot possibly imagine your friend being right in attributing the trouble to the bee-hives.—EDS.]

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING MARCH 25, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Mar. 19....	30·09	33 5	41	27	14	33·8	·02*
,, 20....	29·73	30·5	40	24	16	31·8	—
,, 21....	29·73	27·5	35	19	16	26·8	—
,, 22....	29·60	32 0	39	22	17	30·2	·01*
,, 23....	29·66	31·0	39	22	17	30·2	—
,, 24....	29·92	33·1	41	24	17	32·8	—
,, 25....	30·10	36·1	48	21	27	34·1	·20
Means	29·83	31·9	40·4	22·7	17·7	31·3	·23†

* Snow. † Total, ·23.

Mean vapour tension, 0·145 in.; mean relative humidity, 79 per cent.; mean temp. of the dew point, 26°·5. The rainfall, viz., ·23 in., =5,203·29 gallons, or 23·23 tons to the acre, or 1·15 lb. to the square foot. For the week ending March 18, the mean temp., viz., 43°·7, was +2°·5, and the rainfall, viz., nil, −·32 in. The mean temp., February 26 to March 18, viz., 40°·0, is −0°·4, and the rainfall, viz., ·22 in, −·66 in. The mean temp., January 1 to March 18, viz., 40°·5, is +2°·1, and the rainfall, viz., 4·42 in., +·09 in. Partial drought February 16 to March 24=37 days, during which time ·29 in. fell on 6 days, viz., on February 20 and 21, March 8, 9, 20, and 22, and which amount equals 6,560·67 gallons, or 29·29 tons to the acre, or 1·45 lb. to the square foot; greatest fall in 24 hours, ·21 in., on March 8.

MARCH TEMPERATURE.

March 11-14, 1899.

1899.	Temp. 9 a.m. deg.	Max. deg.	Min. deg.	Range. deg.	Mean. deg.
March 11	47·0	59	38	21	48·2
,, 12	48·5	60	42	18	50·7
,, 13	40·0	60	31	29	45·1
,, 14	46·0	59	36	23	47·2
Means	45·4	59·5	36·8	22·7	47·8

March 20-23, 1899.

1899.	Temp. 9 a.m. deg.	Max. deg.	Min. deg.	Range. deg.	Mean. deg.
March 20	30·5	40	24	16	31·8
,, 21	27·5	35	19	16	26·8
,, 22	32·0	39	22	17	30·2
,, 23	31·0	39	22	17	30·2
Means	30·3	38 3	21·8	16·5	29·8

FRED. COVENTRY.

Duddington, Stamford.

Queries and Replies.

[2182.] *How and When do Bees Feed?*—1. In the summer time do the bees that go out to gather stores feed on the nectar of the flowers upon which they happen to be working, or upon the honey already stored in the hive? 2. In winter do they feed at all during their semi-dormant state, or is it only when they arouse to action that they make large demands upon their stores? 3. Can you give me an idea how long it will take to consume a standard frame full of honey by as many bees as will cover it on both sides? 4. How much does a standard frame full of honey weigh? 5. How do you account for the fact mentioned in my query (2157, p. 77), viz., that my bees seemed to have as much honey in the combs on February 18 as when I packed them up in September? 6. I gave a few pints of syrup also, four or five pints. Is this an undue amount of food to winter a moderate stock of bees on? I fear you will think me troublesome, but I am an eager learner and a very ignorant one.—C. E. C., *Handsworth, Birmingham, February* 25, 1899.

Reply.—1. Bees, no doubt, partake of some "breakfast" before starting out foraging. Besides, freshly-gathered nectar is almost as thin as water. 2. Bees cannot live for many hours entirely without food. 3. It would only be guess-work. 4. We have seen a standard frame of comb holding over 7 lb. of sealed honey, but 5 lb. is a good weight. 5. We think you only guessed at their condition, without examination. 6. No.

[2183.] *Moving Bees.*—Kindly say, through the B.B.J.—1. May I safely remove stocks of bees in skeps as late as the end of April to the distance of about a quarter of a mile from their present position, to be there placed on the top of a bar-frame hive fitted with foundations, so that the bees may transfer themselves to the latter? 2. What are the chances of the bees swarming when so placed? 3. Would you advise the skeps being immediately, on being removed, placed on the bar-frame hive?—M. W., *Hants, March* 15.

Reply.—1. Refer to query on "moving bees" on p. 119 last week for reply, and move as soon as possible. 2. The chances will be much reduced. 3. Yes.

[2184] *Transferring Bees from Skeps to Frame-hives.*—I have two swarms of '98 in skeps and two other stocks in skeps. How old the latter are I cannot tell, but about two or three years, I think. None of the four skeps have been looked at during the whole time, but bees seem plentiful inside. They got sugar and syrup last autumn and I am now giving them syrup outside, which they take freely, and many seem returning from long flights. I go each year twenty-five miles away from here in June and want to bring my bees so that I can look after them till about August 20, after which date our "herd" and caretaker could look after them during the rest of the year with occasional visits from myself. I want to establish an apiary at the place mentioned as it is a great clover and heather country, and I have a very good place (walled in) in which I could keep fifty or more hives, at the side of a river full of trout and salmon so that I could enjoy fishing and bee-keeping at the same time. I have eleven new empty hives holding ten brood frames each, and by a raiser can hold three trays with twenty-one sections in each tray, and as we have a carpenter's shop, used for the salmon-fishery, I could get what I liked made. How and when am I to transfer them?—Erin, *Fermanagh.*

Reply.—By "transferring" you will reduce the chances of swarming; therefore, if increase of stocks is desired we should not transfer at all, but let the four skeps swarm naturally—as they will early in a good district—and stock eight of the new hives with the swarms. Then, twenty-one days later, the combs and bees of the parent skeps may be transferred to the remaining hives if desired; but we prefer starting new hives with new combs rather than old patched-up ones, as being more easily manipulated and healthy for the bees occupying them.

[2185.] *Bees Wintering in Surplus Chamber.*—Having a surplus chamber with eight frames spaced with the wide "W. B. C." ends over body-box left on one of my hives all winter, and the queen and bees clustered in the top, I ask—1. What will be the best thing to do—allow them to remain, or, later in the spring, drive the queen below and put excluder between? 2. Do you consider it at all injurious to the bees to place the hives under apple trees? Would it upset them when the apples fell on to the hives from the trees? 3. Is there any danger of suffocating the bees when moving "W. B. C." hives (carrying, without any jarring or upset of any kind, 300 yards) if the outer entrance is closed entirely?—Nemo, *Oxon.*

Reply.—1. It would certainly be advantageous, so far as getting the bees and queen below, if two or three of the wide-spaced frames could be at once removed and the bees contracted on to fewer combs, and we should prefer that plan to putting excluder zinc between after driving queen into the lower body-box. But careful feeding might be needful if most of the stores are removed along with the combs. 2. No. The hives shown in the apiary of the writer, p. 485 of B.J., vol. 24, were all under apple trees. 3. If the hives are carried as stated in the evening, the entrances need not be closed at all.

Echoes from the Hives.

Banffshire, N.B., March 27.—March came in like a lamb this year, and the first half of the month was all that could be desired, with a temperature more like May. Since, we have had the snowstorm of the winter, with heavy drift and a low temperature. Last week the mercury recorded 18 deg. of frost. Breeding had begun well, so I fear chilled brood will be a natural result of the sudden change. As I write, 27th, there are some signs of a change to thaw. For several days it was trying to see so many bees finding an untimely end in the snow. They were tempted out by bright sunshine, and no amount of shading seemed to have any effect in keeping them in the hives.—D. M. M.

TRADE CATALOGUES RECEIVED.

Thos. B. Blow & Co., *Welwyn, Herts.*—Mr. E. H. Taylor, who is now sole proprietor of this well-known hive factory, this year issues a large and comprehensive catalogue of eighty-six pages. In it Mr. Taylor announces the complete rebuilding and enlarging of his factory and storehouses (after the disastrous fire of last year), and stocking them with entirely new plant and machinery of the best type, which will enable him to keep on hand ready for delivery a full stock of bee-keepers' requirements. We note that all prepaid orders for goods (except bees and bottles) amounting to £2 and upwards are sent carriage free to nearest station.

W. P. Meadows, *Syston, near Leicester.*—Mr. Meadows, while relying on his large and fully illustrated catalogue of last year, has sent us two supplementary lists for 1899, dealing specially with his "Birmingham Prize Hive," which has been still further improved for the coming season. He has obtained a patent. His "Cottager's Hive," suitable for heather, going very cheap and effective. The design of this hive is also registered. We also note that celluloid quilts and queen excluders are supplied to all hives at a slight increase in price. Here, again, we see that prepaid orders of £2 and upwards are sent carriage paid.

J. S. Greenhill, *Graham-road, Wimbledon.*—Mr. Greenhill's is a small and well-arranged list. His long experience with the firm of Geo. Neighbour & Son, in sending out swarms, queens, and stocks of bees, make him a reliable man to deal with for those important items.

R. H. Coltman, 49, *Station-street, Burton-on-Trent.*—Mr. Coltman sends us a small but well-compiled list of bee-goods, among which are some specialties to which he has given particular attention. He also illustrates an improved swarm-catcher, of which particulars have been sent us, and will appear in our usual column headed "Novelties for 1899" next week.

Bee Shows to Come.

June 5 to 8 at Windsor.—Bee and Honey Show in connection with the Royal Counties Agricultural Society. Several classes for past season's honey. Schedules from A. D. Woodley, Hon. Sec. Berks B.K.A., 17, Market-place, Reading. **Entries close May 13.**

June 9 and 10 at Epping.—Show of Bees, Honey, and Appliances in connection with the Essex Agricultural Society. Schedules from Mr. G. F. Offlahertie, Monghyr Cottage, Loughton, Essex. **Entries close May 17.**

June 19 to 23 at Maidstone.—"Royal" Agricultural Society's Show. Bee and Honey Section under management of the B.B.K.A. Schedules from E. H. Young, Sec. B.B.K.A., 12, Hanover-square, London, W. **Entries close May 1.**

September 6 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 30.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Leyton as a Bee District.—Referring to the inquiry of J. A. Nichol (on p. 120) regarding Lea Bridge, Leyton, as a suitable place for bee-keeping, a B.J. reader who is well acquainted with the district kindly writes as follows:—"Lea Bridge is an unsuitable place for bee-keeping. The little pasturage afforded by the 'Marshes' is practically useless owing to their wet, cold, and low-lying character. A hive of bees might be able to exist, but no surplus honey could be expected. Chingford, a few miles beyond Lea Bridge, where there is some open country, is a much more suitable district."

A. S. W. (Suffolk).—*Number of Hives one Man could Manage.*—So much depends upon *the man* that we can only say that several of our large honey-producers manage over a hundred stocks of bees and attend to other matters besides. For the rest, only experience will prove "how many colonies a man with fair ability and four or five years' experience could manage properly," as "A. S. W." puts it.

J. Cooper (Ryde).—*Raising Hybrid-Carniolan Bees.*—Under the circumstances we advise allowing the young Carniolan queens to mate with native drones.

K. W. (Over Stowey).—*Dissolving Naphthol Beta.*—We cannot be answerable for failure to dissolve naphthol beta unless the instructions are properly carried out. And whatever other purposes "whisky" may be good for, it is unsuitable for the purpose. Pure spirits of wine (alcohol) is better than methylated spirit for dissolving naphthol beta, but, being so difficult to obtain, the latter has been advised, and our correspondent might, we think, have been quite sure that the author of the "Guide Book" would not recommend anything deleterious for use in feeding bees.

Editorial, Notices, &c.

THE "ROYAL" SHOW.

A REASON FOR MAKING ENTRIES.

The advertisement on front page of this issue affords an opportunity for reminding readers that the entries for the important show to be held at Maidstone in June next will close in about three weeks' time, viz., on May 1. Bearing in mind, too, that the B.B.K.A.—to whose management the Bee department of the Show is entrusted by the Council of the Royal Agricultural Society—have increased the amount of prizes this year to over £60, we do hope that bee-keepers will appreciate the effort made to render the Show worthy of the "Royal," not only in the value of the awards, but of the bee-industry as a whole.

The poor season of '98 has, of course, seriously damaged the prospect of seeing good honey staged from many districts, but the scarcity should stimulate those who possess honey of any year to enter the lists, and swell the number of exhibits. To put the matter in another and perhaps more attractive way, there will be a considerable increase in number and value of the prizes (compared with the shows of recent years), and a no less considerable increase in the chances of winning an award by reason of the probable scarcity of exhibitors. Add to this the usual facilities for the return of entry fees for honey of '99 in case of adverse weather, we think a good case is made out for urging an appreciatory effort on the part of bee-keepers in response to the generous donations which go to swell the prize fund.

FOUL BROOD (*Bacillus alvei*).

AN INVESTIGATION INTO ITS NATURE.

By Henry W. Brice.

(*Continued from page* 124.)

Inoculation.—First procure a piece of comb with diseased larvæ (this should be kept in a box containing naphthaline, and when not in use is wrapped in a cloth saturated with carbolic acid solution). In the operation of inoculation take a platinum needle, and having sterilised it in the flame of the spirit lamp—the tubes containing the media being ready at hand—insert the needle into the affected matter (whether comb, or larvæ, or prior cultivation), remove the plug from the tube, and without an instant's delay thrust the needle into the medium and plug it up the moment it is withdrawn from the affected specimen. Repeat the operation with as many tubes as are wanted as speedily as possible, carefully observing the following cautions:—(1) Always singe the plug and mouth of tube in the spirit lamp both before and after inoculation, and before and after withdrawing the plug and replacing it. (2) Never lay the tube-plugs or the platinum needle down on the work-table. (3) Always sterilise the needle immediately the inoculation is complete. (4) Wash the hands repeatedly (especially before and after the operation) in the carbolic solution, and (5) wipe the table well down as before mentioned. If these precautions are not taken, or if only half carried out, the cultures will be uncertain and growths of adventitious micro-organisms will be sure to follow. Great care is also necessary to ensure that the disease is confined to the culture-tubes alone. Those who keep bees and are not prepared to rigidly observe the precaution I have named had better refrain from experimenting at all.

In making subsequent inoculations from special tubes to others—or into a change of media—the same course is followed, and with the same care and attention to antiseptic conditions. Finally, when the object sought after is attained, destroy all infected substances by fire! Never allow diseased specimen combs, or affected bees to lie about for any time after they have served their purpose.

Cultivation of Bacillus Alvei.—Having inoculated our tubes, they are arranged in a warm place (temp. 75 deg. to 80 deg. Fahr.) in an upright position. A tube-stand is useful here, but any kind of used tin box of convenient size will serve the purpose fairly well. Twenty-four hours after the cultivation has been started, a growth will be seen if the

Fig. 5.
$\frac{1}{12}$ Oil imm., No. 1 Ocular. Magnified 1,000 times.

media is right, such as appears in fig. 2 (page 123), in which the various colonies of germs can be distinctly traced, mostly crowded together, but often in an isolated condition, as seen in fig. 4. From three to four days later the growth appears as in fig. 3. If a portion of this growth is now removed and placed under the microscope, only rods will be found, all spores from the original specimen having germinated. Some media results in longer rod-shaped forms than others; among these latter may be mentioned the fluid forms of media, such as broths, liquefied gelatine, and the moisture found at the bottom of tubes containing agar-agar, all these giving a great majority of long forms. On the other hand, samples cultivated from potato or on the solid parts of agar, &c., produce short, and, in my opinion, the most virulent of the rod-shaped forms. It will also be noticed on examination that these short rods are far more active than the longer ones seen in fig. 6. Still longer rods are shown in fig. 7; while the manner in which the rods split can be well seen in both figs. 5 and 6. If some of the tubes be now placed in a temperature of 100 deg. to 104 deg. and examined in twenty-four hours, a large number of spores will be found, and if the same temperature is continued for a day or two or raised to 110 deg. Fahr. for twenty-four hours the bacilli will have either spored or been destroyed. Again, if the cultures are allowed to cool to 45 deg. Fahr. or below, the same phenomena takes place, *i.e.*, the bacilli are destroyed and a large number of spores are rapidly formed. It will thus be seen that there is a specialised temperature most favourable to the life of the bacilli or active form of the disease, and directly this limit is exceeded either on the upward or downward scale the disease becomes latent. But spores remain, and these are practically indestructible by any means that could be used with safety to the bees; they only require suitable and favourable conditions to supervene for the space of half an hour in order to transform them into the virulent type known as rods, and these rods are capable of producing two generations every hour of their existence as such! A single spore is thus capable of infecting a whole colony of bees in a week if it were not for the natural immunity of all living things to disease, of which I shall say more later on.

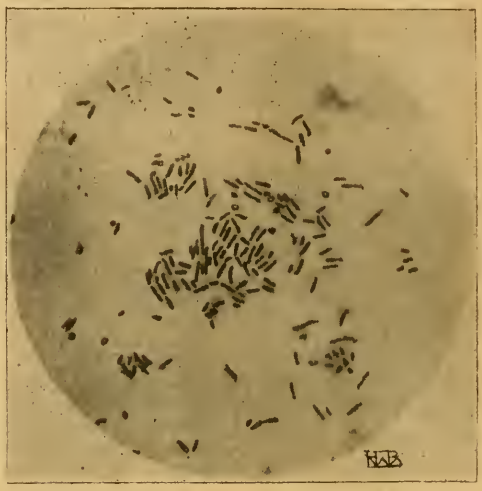


Fig. 6.
$\frac{1}{12}$ Oil imm., No. 1 Ocular. Magnified 1,500 times.

To those desirous of tracing the complete life history of *B. alvei*, it is necessary to make at least five sub-cultures from the original, each of which cultures must be upon different media. Careful observations must also be made to ensure that through every stage the same distinct phenomena exist, in order to ensure that when the last degree of cultivation has been reached we have *B. alvei* in, so to speak, its purest form. The photographs illustrating this article have been made from this cultivation. The micro. slides I have made (over sixty in number) illustrate from nature almost every degree of cultivation possible. Beginning with the diseased matter in an infected comb, they pass onward to the bodies of queens and bees from diseased stocks and continue right down

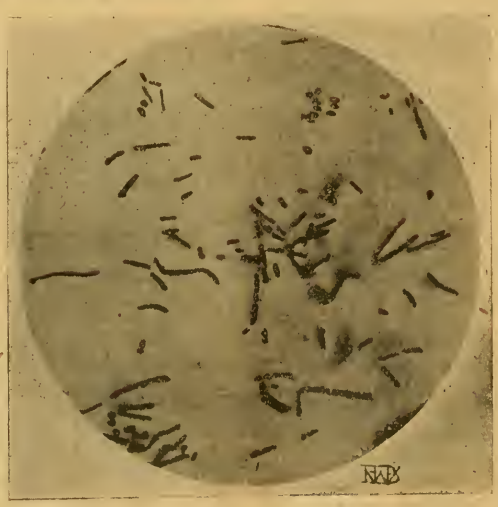


Fig. 7.
$\frac{1}{12}$ Oil imm., No. 1 Ocular. Magnified 2,000 times.

through every stage of growth even to the last. And having arrived at this stage, and the tubes, eleven in number, are, as I write, before me on all the various media already described. Exactly the same forms are now found as when I made the first inoculation several months ago; the débris, blood corpuscles, fatty matter, and foreign organisms generally have, however, disappeared long since. We may therefore be certain that the battle between these outside germs and *B. alvei*—which undoubtedly took place in the gross matter and in the first cultivations—has been fought and won. In other words, the pathogenic (to bees only in this case, fortunately) and base organisms have prevailed over the good and probably beneficial microbes, leaving the former in full possession of the field. One fact, however, has been clearly proved to my mind by experiment, viz., that as successive cultivations have gone on, the disease appears to lose much of its virulent and contagious nature. I come to this conclusion after a series of tests. For instance, I obtained through the courtesy of our Editor a piece of old comb sent to the B.B.J. office for examination quite six months before it reached my hands. The sample was marked as "slightly diseased," and had by chance escaped the immediate destruction usually accorded to such samples. When examined under antiseptic conditions, off-hand it would certainly have been pronounced quite free from any trace of brood, foul or otherwise. I took a looped platinum needle and scraped a small quantity of dried matter from the bottom of one of the cells (not nearly sufficient to cover a pin's head) and placed it in a little water on a "slip" (*i.e.*, a piece of glass 1 in. by 3 in., used for making microscopic slides). The microscope revealed, I may safely say, thousands of foulbrood spores, along with some foreign matter. I added a little broth and a small quantity of meth. blue (aqueous) and in little more than half an hour afterwards I had rods innumerable, with a noticeable decrease in the number of spores. From this material I inoculated a plate-culture, and in twelve hours had an exceeding strong growth. A photo taken on the fourth day is seen in fig. 4 above mentioned. The marvellous rapidity of growth will here be seen, extending right round the plate. Thousands of colonies could be seen, many of which have overrun each other, while some are still isolated. Each colony, however, contains hundreds of thousands of individuals, which, when examined under a low power ($\frac{1}{4}$-in.), appears to be a swelling, moving mass of cream-coloured pus-like corruption.

(*To be continued*).

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of February, 1899, was £1,593.—*From a return furnished to the* British Bee Journal *by the Statistical Office, H.M. Customs.*

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to "The Editors of the 'British Bee Journal,' 17, *King William-street, Strand, London, W.C.*" *All business communications relating to Advertisements, &c., must be addressed to* "The Manager, 'British Bee Journal' *Office*, 17, *King William-street, Strand, London, W.C.*"

*** *In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

NOTES BY THE WAY.

[3630.] With the month of April the bee season may be considered begun, for the busy-bee is ever on the alert to rifle the nearest flower of its sweets as soon as the sun shines forth after the April showers. The woods will soon be carpeted with blossoms, the wild anemone has already put forth a few early blooms in sheltered spots with a sunny aspect. There are also numberless small flowers in the fields which not only provide a supply of pollen but yield some honey. Though only weeds they are useful to the bee-keeper, the early supply from them helping to build up his stocks into condition to secure the more abundant later harvest from white clover, sainfoin, &c. My bees are very busy to-day (Easter Monday) on the artificial pollen, and at the watering places. Many stocks look very strong and promising this season, and I am glad this is so, for bee-keepers are already waking up. Inquiries for swarms and queens have began to come in. Those who require fuller information than the advertisement columns of the B.B.J. afford should write direct to the advertisers and get their orders placed well up on the lists for delivery, or they may have to wait till earlier orders are filled. This not only applies to swarms and queens, but to all other requisites for securing the honey crop.

Sending Honey by Rail or Post.—I notice that your Rev. correspondent, Mr. Charley (3607, p. 93), makes inquiry about light boxes for packing sections. I should say these can easily be supplied in the flat, and in that form take up very little room, but a dozen or two nailed-up would be very much in the way, except one has abundance of store-room. On the other hand, two or three minutes' time can be spared, and with a few wire nails will get over the trouble of nailing-up. But I should never advise any bee-keeper to risk his section honey through the post. Glass jars, well secured, may reach their destination undamaged sometimes, but with sections the case is different, and these should always be packed

in boxes, then in a cushion of soft packing; but even then they do not always reach the end of the journey in good, undamaged condition. By rail, however, with careful packing and a good, bold label, I very rarely get any sections damaged. Besides, these parcels are sent at half-rate (or "agricultural produce" rate). I have written to inquire prices, and will stock and advertise some, if feasible, in a week or two.

County Bee Associations.—The Bee Associations have now held their annual meetings, and many are starting on the campaign of 1899 with very small, if any, balance in hand. Let us all endeavour to make it a good year for all connected with the craft, not only for individuals, but for County B.K.A. immediately concerned. These latter must, however, depend upon the individual for help—a bit beyond mere membership—by inducing his neighbour bee-keeper to join also. Considering, too, the many advantages accruing to membership, I wonder many more bee-keepers do not belong to their county or district association. The cottager—*i.e.*, the labourer whose wages are 10s., 12s., or 15s. per week—pays but 2s. 6d. per year, and the artisan mechanic or the occupier of a villa, say, 5s.; both generally receiving 2s. 6d. worth of literature during the year in shape of the *Record.* Then the expert usually makes a visit in the spring; and the member is entitled to exhibit, at half the usual entry fees, not only at his own county or local shows, but also at the shows held by the British Bee-keepers' Association in London or elsewhere when his county association is affiliated to the British Association. And yet, with all these privileges, there are some who ought to be ordinary members, paying 5s., yet are mean enough to pay 2s. 6d., and expect to have the *Record* addressed, ———, Esq., Clarence Villa, Blankshire.—W. Woodley, *Beedon, Newbury.*

BEE-KEEPING NEAR TOWNS.

WHAT TO AVOID.

[3631.] I have been a bee-keeper some six years. I well remember my first bee-purchase (hive and swarm cost me 30s.), but I thought as much of it (nearly) as my brother-in-law thinks of his first baby! The man I bought it from told me to wait a few days, clap the super on, and then go out amongst my neighbours to get orders for the honey. But the bees did not gather any, at least they were selfish and only gathered enough for themselves, and this made me think that I was "had" a little over that swarm. I also remember that it was a very small one, consisting of a handful of worker-bees and two handfuls of drones.

The hive also proved a perfect drone-trap, it is so constructed (whether badly or by design I trow not) that under some conditions the drones cannot get out. Not knowing this at the time, I lowered the front of the hive (previously raised for ventilation) and every one of those poor drones was imprisoned and eventually died, without my knowing why. The following year I heard, on one fine day, a peculiar frog-like, croaking noise at the entrance, and wondering what it meant, I raised the front of the hive, and out rushed the drones in scores. This I do now every season.

After my stocks had increased to three, the neighbours began to complain that our back garden was not a suitable place for keeping bees in, which meant it did not suit the neighbours; at any rate, Mrs. Giddens said the bees dirtied her washing, to which Mrs. Howard said ditto; then another neighbour's little boy got stung in the eye! And so, not being able to hold out against the combined feminine attack, I soon afterwards moved the bees to an allotment I have some distance away. Here they did all right through the winter months which followed, but when the summer came the "game" that started beat the back garden and the washing and the ladies hollow. The man who worked the next plot to mine (just facing the bees) was telling me one warm day how pleased he was to see the bees flying about. "It put him in mind," he said, "of his boyhood, when his old dad kept bees," &c. He had just got this far, when a bee gave him a "prod," and a comrade bee following suit, he got stung again! And so it went on through the summer months, various allotment holders receiving a share of the bees' attentions. I fancy the bees must have been upset by mischievous boys.

After various complaints a climax was reached when I began "taking" honey. One man could hardly see out of his eyes for several days; another (it was great fun) buffeted the bees buzzing round him with potato tops; he was getting on fairly well in the "buffeting" business, but unfortunately fell through a row of pea-sticks into a celery trench! Then the bees *had him,* and his language was warm enough to fairly wither the crops.

After this I thought it about time to look out for another location for the bees, and therefore arranged with the occupier of a garden to allow me "bee-room" at 1s. a year per hive. Thus I have nine colonies now, located close to where the first battle of St. Albans was fought. I have also fifteen stocks on the other side of St. Albans, close to the spot where the ancient "Fishpool" of the Abbey was in days gone by. Tradition has it that the monks of old, for frugal reasons, drained this fishpond because of its attracting so many kingly and noble visitors, who had to be fed and lodged at the Abbey near by.

The fifteen hives last mentioned are an overflow from my home apiary at Bernard's Heath, which I consider best of the two, as it is in the valley near the meadows (where

white clover is plentiful) through which runs the Ver.

Like everybody else, I was a bit troubled with honey-dew last year, but my produce was not dark enough to be unsaleable; and, apart from colour, the quality was good, but when put in glass jars it did not look quite up to the mark. I therefore, with the help of a friend formerly in the crockery business, got a gross of beautiful cream jars of earthenware, costing me, with carriage, &c., about 17s. These, along with some similar ones bought from a local dairyman, enabled me to sell my honey without the slightest difficulty; in fact, I had to buy a ½ cwt. to meet the demand.

I sell most of my honey retail at 10½d. per 1-lb. jar, though I last year "wholesaled" a little at a less price. I find some grocers are good honey sellers and others just as bad; the latter can't sell a dozen jars. One grocer who had some dozens from me soon sold out, and on my enquiring how he managed it, he told me that a vegetarian family had taken a few jars each week as long as the supply lasted. Prior to this I had an uncertain kind of feeling regarding vegetarians, but from now I am going to help them for "all I am worth," as good honey consumers, and you must know I am expecting at least a quarter of a ton of honey during the coming season.

I have taken the British Bee Journal ever since I first knew there was such a paper (over five years ago), and really don't see how I could possibly get on without it. Indeed, when I call at our local stationer's for my usual weekly supply I can stand having to "wait" for any but my Bee Journal, with which, like a good many other bee-keepers, I am in love.—Sainfoin *St. Albans, March* 30.

[We wish our correspondent would give up calling it "great fun" when angry neighbours are justly incensed at being stung and otherwise annoyed by his bees. It savours so much of bad management.—Eds.]

BUCKWEED HONEY.

[3632.] Your letter in reply to mine regarding the buckweed honey arrived last mail, and the enclosed seeds also. I am much obliged to you for the trouble you have taken, and also to Messrs. Brice & Cannell for the seeds, to whom I intend to report progress when the plants come up.

It is the hottest time of the year just now, but April will be cooler, when I intend to sow some.

Your report on the honey, although somewhat disappointing to some bee-men, is much what I expected, as it has certainly a rather sharp taste. The aroma was stronger when fresh gathered than now, several people remarking it from the road, from which my hives are quite 100 yards distant. The sections from it looked very pretty, being capped with white.

Referring to the "package" sent you, there would, I should say, be no difficulty in "bottling" honey in bamboo cane, as it is commonly used for carrying water and makes a good water cooler. I hope you will have a prosperous bee year for '99.—A. C. Sewell, *Durban, Natal, February* 16, 1899.

[The above letter, addressed to the Vice-Chairman B.B.K.A., has been handed to us by Mr. Till for publication.—Eds.]

A PECULIAR BEE EXPERIENCE.

[3633.] In September last I had a very peculiar experience with a lot of driven bees. You may remember that the wasps were very troublesome last autumn, not only to people in general, but especially to bee-keepers (or, to be quite correct, to *bees*). In fact, I have never known so great an amount of damage done by wasps to hives whose owners are not over-careful in managing their bees. I had been asked to drive a small stock in skep for a farmer who is a great skeppist; and having successfully got through the job and found the queen, I took the bees home and put them in a five-frame nucleus hive. All my feeders being in use, I made a substitute by boring holes in a celluloid photographic dish; and, after filling with syrup, placed it on the top of the hive, covered all up snugly, and left them. Next day I looked to see how the bees were getting on, and you may imagine my surprise on finding the syrup untouched and the bees all collected between the felt quilts, close to the feeder! I sprinkled them with thin syrup, which they also refused to touch. My first impression was that something was wrong with the syrup, but I found that my other stocks took it readily. I had also taken especial care in cleaning the dish-feeder, so it was all right. However, I gave the bees a proper feeder and warm syrup, then covered them up with extra thicknesses of quilts. Next day being Sunday, I did not touch them, but on Monday I noticed that the wasps were robbing them wholesale. This I tried to stop, but the bees were as fierce as the wasps, so I closed the entrances entirely. The wasps after that began to clear off. When all was quiet in the afternoon I again had a look, and discovered to my annoyance that the bees had decamped—not one left. Ever since I have been wondering at the cause. Why they refused the syrup most puzzles me, as it was of splendid quality. The hive also was all right, for I thoroughly overhauled it next day. Was it not a curious experience? It is one of those unaccountable mysteries we occasionally come across in bee-farming. Have you ever had anything of this kind happen in your apiaries?—C. P. S., *Birmingham.*

[We never had such an experience, but it is not easy to account for the action of driven bees at times, and once "robbing" begins it is very difficult to stop.—Eds.]

NOTES FROM A BEE-KEEPER'S DIARY.

[3634.] *Saturday, March* 11, 1899.—"Spring's delights are now returning"; and truly it is delightful to walk out in my garden this beautiful day, and, after a week in bed with a Russian foe, a change to the fresh air and glorious sunshine breathes new life into one. Thousands of crocuses line the walks—all colours, blue and striped, white, yellow, and purple; bees are working merrily away in and out of the hives, making, after their own kind, hay while the sun shines; catkins are dangling and glistening in the sunshine; double snowdrops and blue squill popping up their little heads above the grass borders; everywhere the humming—gentle, good-tempered humming—of the bees. How the daffodils and narcissi have "come on" since last I had a look round! A solitary Christmas rose—the last of the season—looks rather disconsolate. Who would think it only the second week in March? Why the bees are as busy as though they were in the merry month of May. I have been told not to work, but, with my little friends so busy and withal so happy, it is contagious. I must do something. Off with the big stones that have done right useful service and kept my hive-roofs on during the terrible gales. Yes, though the end of my house was blown in on January 12, not a hive suffered. Off with the roof, and spread out the quilts and cushions to the genial warmth of the sun's rays. Now for a peep at the candy.

Nos. 1, 3, 4, 5, and 8, no signs of its exhaustion; Nos. 2 and 6, nearly all gone; No. 7—skep—just a scrap. A peep under the quilts shows ample sealed stores. Don't uncap yet. Patience! The bee-man's motto. Don't hurry on our friends too much at present. Frosty nights are bound to come, and then woe betide the brood in over-stimulated hives. Feel a bit exhausted now, so go in and have a rest; then back again to replace the quilts and roofs; 4 p.m. and the bees still busy.

Sunday, March 12.—Another glorious day. Bees out early, and so am I for a sick man. "Please let me have your old tea-leaves, and don't throw any more away." "Tea-leaves!" echoes the strange domestic that is within my gates. "Tea-leaves! What do you want tea-leaves for?" "For the bees," say I. "Why, I did not know they fed on tea-leaves." "Now some old saucers, please." There, now I saturate them with water and put them in this sheltered and sunny spot for the bees to drink from without danger to their lives; 2 p.m., 70 deg. How lovely the crocuses appear; their petals widely expanded and the glorious anthers exposing the tempting pollen to the diligently seeking bee. Look at them, almost every flower has a bee—two—three in some. One thing I notice, the yellows are deserted. In one alone do we see a bee. In parenthesis, I may say I have noticed this for several years. Motto for bee-keepers: *Don't* plant yellow crocuses. How that little nucleus is working, more activity being shown than at some of the strong stocks. "Robbing," did you say? Not at all—here they come with baskets of golden (pollen) grain, pell-mell over and over each other they go, in their eagerness often losing the contracted entrance and turning from one end of the alighting-board to the other before they find it. Listen to the gentle song they sing, no fighting—no anger here. Yet this is only a three comb "stock"—plenty of sealed stores and a box of candy. I take off the roofs and again give the quilts and cushions an airing in the sun. Is it necessary? Beware damp—deadly foe and fell precursor of deadlier foul brood. *Sanitas sanitatum omnis est sanitas*—another motto for the bee-man. My word, how that jargonelle is bursting out in bloom. I regret to see it. For three years now my crop has been caught by May frost. A great loss, for this tree, when it does "set," yields me 150 to 200 lb. of grand fruit. The white arabis is showing bud. I have hundreds of yards of it, but it is doomed. A good bee-plant? Yes; but look here. I lift up a mass. Slugs galore! A veritable paradise for these garden pests. Now I know why I had to plant out again and again my half hardies last year. Yes, it will have to go, a portion to the rubbish heap and the rest to an obscure corner. Listen to that missel thrush in the top of that giant dead yew. What varied notes? There he has been singing from early dawn to sunset for some weeks. I love my birds equally with my bees and flowers. Even the tom-tits are respected. Old bones and cocoanuts suspended from the trees afford us many happy hours in the winter days. In the trees are drain pipes, the bottom stopped up and the top covered with a flower-pot. What fun in summer to watch them popping in and out. Are they foes of the bees? I don't think so! I never saw them take a live bee yet. "Pink pink," a chaffinch—two—how sleek they look. Fond of my daffodil buds? Never mind—live and let live. They are beautiful and almost tame. I must divide those heleniums, leucanthemums and ulginosums; grand pollen plants in the autumn. Giant balsams are coming up thick. Sansan will have a couple of days work here with his hoe. It is getting a wee bit chilly, I take my last walk round and reluctantly go indoors and spend an hour or so with "Carpenter" on the microscope.—WHITE CLOVER, *March* 20, 1899.

CURIOUS NOTES ABOUT BEES.

[3635.] The following are extracts from *Notes and Queries* for January 19 and February 23, 1895 (8th S. vii., pp. 46, 157):—

"*Curious, if True.*—'I wonder if any of your readers recollect that it used to be a

custom in the Roman Catholic villages in America to place in the centre of a hive of bees, which was found in every cottage garden, a wee morsel of the sacred wafer, kept back from the Celebration? Well, it used to be the case, and this atom used to be called "the little God Almighty," and was supposed to ensure the bees from all harm, and that the crops of honey in such a protected hive should be far above the average. It was never to be moved. It was placed there by the priest, and it was supposed to be the centre round which all that went on in that special hive moved.'—So writes Mrs. Panton in 'Within Four Walls,' p. 274.—St. Swithin."

The following is an extract from Hone's "Every Day Book, vol. i., under date of July 19:—"In July, 1797, as Mr. Wright, of Saint Faith's, in Norwich, was walking in his garden, a flight of bees alighted on his hair till they made an appearance like a judge's wig. Mr. Wright stood upwards of two hours in this situation, while the customary means were used for hiving them, which was completely done without his receiving any injury. Mr. Wright had expressed a strong wish for some days before that a flight of bees might come on his premises."—FRED. COVENTRY, *Duddington, Stamford, March* 14.

HERBERT J. SANDS.

("LORDSWOOD.")

(*Continued from page* 126.)

Not long after Mr. Sands had settled down at Rednal Cottage we had some correspondence in reference to sending out a selection of Alpine plants to Mr. Cowan in California, where the latter was then staying. It was then we learned how deep was our friend's knowledge and experience regarding plant-life in countries where the climatic conditions were entirely different to our own.

That his "gardening" was of no common order may be gathered from the following note, read in conection with the date on which it was written (February 26), and the fact that he had no love for the cultivation of plants under glass. He says:—

"Is it not lovely weather? My garden is a mass of early flowers—crocus from the Ionian Isles, snowdrops from Asia Minor, Crimea, Italy; chionodoxas (snow-glories) from mountains near Smyrna; sallas from Siberia and Caucasus; tiny daffodils from the Pyrenees. By Jove! if I can get home to-night by daylight I will put up some in a box and send them on to you!"

"I hope Mr. Cowan will be able to introduce some of the gems of the alpine flora (which I grow) into California for the benefit of posterity; but I still have my doubts about his being able to *grow* them there, even if they may be safely sent. I have had a long experience in growing 'alpines,' and I find they cannot endure greenhouse temperature, and even our English sun burns them up out of doors to tinder unless they are continually watered. How, then, can they endure a climate where *in winter* the roses and geraniums and clematis blossom outside, and where *in summer* the sun *must blaze* till the old boys of England who are there positively yearn for the cloudy, rainy skies of their native land? Many people are now rushing off to Egypt and Algeria—where the hawthorn is just now bursting into leaf—to escape our dreary skies; but for my part I say, let the dreariness and darkness come thick and threefold about us, for only by suffering it can we get to know the fulness of the beauty of summer!"

"I am now amongst the bilberry and heather—I and the bees. The latter have a sweet little paddock all to themselves. The grass is strewn with daisies and dandelions, and lesser celandine and damson blossom is dropping about the hive roofs. It is a late, wind-swept district, but fresh and sweet and healthful, and glorious in spring, summer, and autumn. Highly inconvenient for your humble servant, for it is a twenty minutes' 'bike' ride to the station, and then seven miles into town; but it is worth the time and 'fag,' even if I had to ride twenty miles to the station and then fifty miles by train. Anything is better than that vile, smoky, noisy *inferno* called 'the suburbs.'

"I envy Mr. Cowan! It must be *grand* to be able to travel about and see other countries and peoples."

The box of flowers promised above came duly to hand, and—though gathered in the open in February—might have been nurtured in the most carefully warmed greenhouse, so fresh, and sweet, and beautiful were they.

For several months afterwards the exceptionally busy times, which always accompany the summer bee-season, caused a temporary suspension of our usual private correspondence, and as we had had several enquiring reminders from correspondents remarking that the contributions of "Lordswood" were conspicuous by their absence from our pages just then, we sent a hasty line explaining *our* long silence, and venturing a gentle hint that readers of the B.J. were wondering at *his*. The next post brought the following reply:—

"Please do not apologise for the scarcity of your letters. I often wonder how on earth you manage to do as you do. I hear of you one day in the north of England—judging perhaps—next day holding an exam. in Cornwall, next in London shaping the B.B.J., next in Gloucester, perhaps, or Durham, or Lincoln, or Shrewsbury, judging again! I should not wonder if one of these wet days you started off to interview bee-keepers all over the surface of the globe—just for the benefit of us lazy, stick-in-the-mud, stay-in-the-house bee-

keepers. Nor can I bring myself to apologise to you for my long silence. It is rather the atrocious customs of the day that ought to apologise instead of me. Customs that for ever keep us on the trot, trot, trot, to make money to purchase unnecessaries. How much better if we were to spend half our day's earning necessities—soap, clothes, food, wooden or brick shed, thatched; and the other half improving our minds, which are things that rust or corrode very quickly. A man who can read and enjoy Virgil, or Aristotle, or Plato, does not need a Turkey carpet on his floor or a staff of servants continually getting and clearing away his meals. Let us be so lost in the contemplation of the beauty of truth and virtue, and of this earth on which we dwell, as to forget to go and kill the pig for dinner, and begrudge the time spent in sanding our floors!

"It is these wretched customs that rob us of our time and energies. We dare not stay away from business a day, we have committed ourselves so much. Houses, servants, offices, rates of same, firing, lighting, &c., to be provided for, so that we must rise with the lark and go money-making all day and every day till we die, whether we are in our natural element or not. Our fathers have led us to believe that it *is* our natural element, that all these things are the necessities of life, but there is a still, small voice in our natures prompting us to go and do otherwise—to be men, and not furniture caretakers. But I must hasten—for post time is here—to condole with you in your anxieties. I am very sorry indeed to hear your daughter has had so serious an illness, and sincerely hope that she will eventually shake it off and be as strong as ever again, for health is far and away better than wealth, in fact, the best of all things. Given health, and a man or woman can snap their fingers at the world, for with this our simple necessities are assured (or ought to be); but given disease (I know it too well) and where are we? Now for a brief space in Heaven, then for a long time in Hell! and then in a sad state of betweenity—ramping round in the nether regions that have never been mapped out and properly named, so that you know not whether it is Hades, or Hela, or Colney Hatch, or anywhere.

"But do you wonder at disease in London? I wonder you all don't have typhus fever regularly every Saturday with the weekly papers! I wonder you don't have some serious complaint (worse than lawyers' letters, and writs, and so forth) every morning, brought by the postmen with your letters! How do you know where that postman has gotten his breath from that he leaves behind him in your entry? Or what micro-organisms—what bacilli—are gathered upon his boots and drop off on your doorstep? Or when the wind blows—say, from Stepney—whose breath do you breathe then? Disease! I wonder there is any one healthy at all in these vast towns. No wonder City men greet each other with words such as these: 'How are you?' 'I hope you are well this morning?'"

(*To be continued*).

METEOROLOGICAL

Observations taken at Duddington, Stamford, Northants, for the Week ending April 1, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Mar. 26....	29·87	47·9	55	35	20	44·7	·01
,, 27....	29·90	45·0	57	37	20	46·7	·05
,, 28....	29·90	50·9	57	42	15	49·3	·01
,, 29....	29·73	53·8	60	49	11	54·3	—
,, 30....	30·14	51·5	57	42	15	49·3	·20
,, 31....	30·14	42·5	56	39	17	47·2	·03
April 1....	30·05	51·1	62	42	20	51·5	—
Means	29·96	48·9	57·7	40·9	16·9	49·0	·30*

* Total, ·30 in.

Mean vapour tension, 0·250 in.; mean relative humidity, 76 per cent.; mean temp. of the dew point, 41°·1. The rainfall, viz., ·30 in., =6,786·90 gallons, or 30·30 tons to the acre, or 1·50 lb. to the square foot. For the week ending March 25, the mean temp., viz., 31°·3, was −10°·9, and the rainfall, viz., ·23 in. −·15 in. The mean temp., February 26 to March 25, viz., 37°·9, is −3°·0, and the rainfall, viz., ·45 in., −·81 in. The mean temp., January 1 to March 25, viz., 39°·7, is +1°·0, and the rainfall, viz., 4·65 in., −·06 in.

Results of Meteorological Observations for March, 1899.

Barometer.

Highest, 30·54 in., on the 1st.
Lowest, 28·97 in. on the 9th.
Range, 1·57.
Average height, 30·01.

Thermometers.

Highest Max. Shade Temp., 60 deg., on the 12th, 13th, and 29th.
Lowest Max. Shade Temp., 35 deg., on the 21st.
Highest Min. Shade Temp., 49 deg., on the 29th.
Lowest Min. Shade Temp., 19 deg., on the 21st.
Range, 41 deg.
Greatest Daily Range, 29 deg., on the 13th.
Least Daily Range, 10 deg., on the 9th.
Highest Shade Temp. at 9 a.m., 53·8 deg., on the 29th.
Lowest Shade Temp. at 9 a.m., 27·5 deg., on the 21st.
Highest Mean Daily Temp., 54·3 deg., on the 29th.
Lowest Mean Daily Temp., 26·8 deg., on the 21st.
Mean of Highest Daily Readings, 50·0 deg.
Mean of Lowest Daily Readings, 31·3 deg.
Mean of Daily Range of Temp., 18·7 deg.
Mean Temp. of the Month, 40·6 deg.
Number of Days Frost in Shade, 19.
Mean of Dry Bulb (9 a.m.) Readings, 39·3 deg.
Mean of Wet Bulb Readings, 36·8 deg.
Mean Vapour Tension, 0·200 in.
Mean Relative Humidity, 80 per cent.
Mean Temp. of the Dew Point, 33·4 deg.

Rainfall.

Number of days on which ·01 in. or more fell, 10.
Greatest Fall in 24 Hours, 0·21 in. on the 8th.
Total Fall in the Month, 0·75 in.

The Mean Temp., viz., 40·6 deg., is +0·9 deg., and the rainfall, viz., 0·75 in., −0·63 in.

Fred. Coventry.

Duddington, Stamford.

WEATHER REPORT.

WESTBOURNE, SUSSEX.

MARCH, 1899.

Rainfall, ·79 in.
Heaviest fall, ·30 in., on 25th.
Rain fell on 7 days.
Below average, 1·28 in.
Maximum Temperature, 59°, on 15th.
Minimum Temperature, 21°, on 21st.
Minimum on Grass, 13°, on 1st.
Frosty Nights, 19.
Sunshine, 193 hrs.
Brightest day, 15th, 10·3 hours.

Sunless Days, 0.
Above average, 29·3 hours.
Mean Maximum, 47·7°.
Mean Minimum 30·5°.
Mean Temperature, 39·1°.
Below average, 2°.
Maximum Barometer, 30·74°, on 1st.
Minimum Barometer 29·62°, on 8th.

L. B. BIRKETT.

NOVELTIES FOR 1899.

COLTMAN'S IMPROVED SWARM CATCHER.

The maker's description of the illustrations shown reads as follows:—

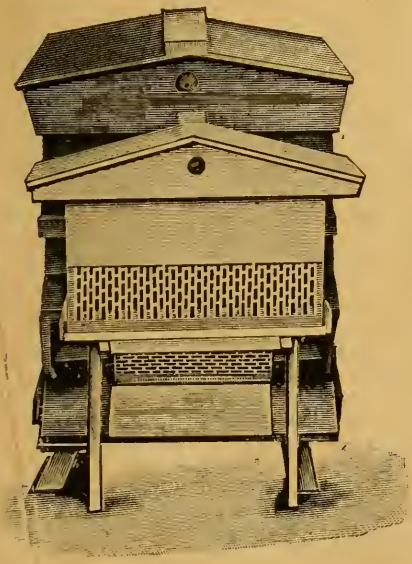


Fig. 1.

Fig. 1 shows the swarm catcher fixed for use.

Fig. 2 shows the interior arrangement. The principle of the swarm catcher is catching the queen in the upper or swarm box, and this is done by means of a number of roller plates working freely on an axle, one set of which open into the swarm box, allowing the queen to pass into box, but preventing her from getting out again. She is also prevented from flying out with swarm by the queen excluder as shown.

Another set of roller plates on an axle open inwards from the alighting board, allowing the worker bees when loaded with pollen, &c, free access without having to pass through excluder, but preventing the queen escaping. Both

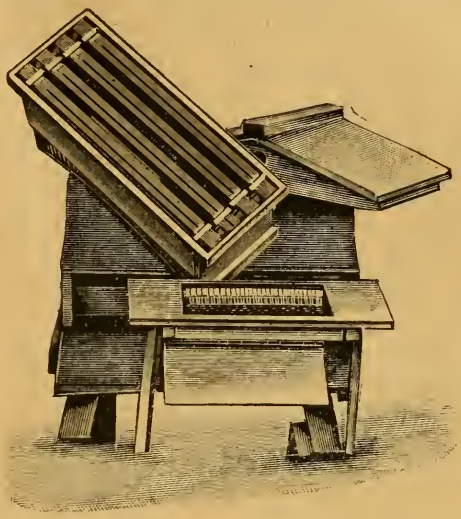


Fig. 2.

the roller plates and the axle on which they work are *made of aluminium*, which ensures the *perfect working* of the roller plates owing to its extreme lightness and the fact that the metal does not corrode. The lightness of the metal also allows bees to pass through freely, aluminium being 3·3 times less in weight than copper.

Echoes from the Hives.

Hatfield Heath, Harlow, Essex, April 3.—The exceptionally fine and warm weather (for March) experienced here for a few days previous to the 16th of the month, gave an opportunity not to be lost of making assurance of the bees being safe doubly sure. On the 14th and 15th (some consider this too early, I know) the conditions were exceptionally favourable. I thoroughly examined my bees and cleaned the hives. While some stocks were in fine condition—one being quite in trim for supering should the willows yield (or, rather, the weather allow them to yield) surplus honey this month—it was plainly evident that some hives had a large percentage of old bees, and these fell away accordingly. The very strong stock mentioned above was not only packed with bees, but the

space behind the dummy was also full, and I found four combs well filled with brood. This hive has now been in use seven years, and has invariably done well; it is a substantial double-walled hive, and the dummy fitting badly, the bees have free passage-way under it. Those stocks that, from loss of old bees, looked as though the hives needed contracting to suit the diminished populations; but, instead of doing so, I just united the bees to their next-door neighbours. This will secure all stocks being ready for any possible early surplus honey-gathering, which, perchance, may come from willows, sycamore, horse-chestnut, or fruit blossom. I never before saw the bees work so well in the wych elm as they did on March 15. Directly following the examination and cleaning of my hives came severe weather; and it made me think how much more comfortably the bees must have passed that trying time, with 15 deg. of frost and a strong east wind blowing full in the face of the hives. The spell of winter seems to have given the bees increased energy, for on April 1 they were just rushing home with pollen and a little honey from the palm willow. They were simply struggling at the hive doorways with their loads of pollen, and I had to relieve the pressure by increasing the width of the entrances. I found all queens were laying well on March 15, and the combs were pictures of health. There still remained a small quantity of the autumn supply of naphthaline left in some hives, and I gave all a full dose of this preventive of foul brood, as it evaporates much more rapidly from this time forward. Owing to the deficient and poor supply of honey last season, and the prevalence of influenza, I have had more inquiries for honey than is usual at this season of the year, at a slight advance in the prices offered.—Wm. Loveday.

Queries and Replies.

[2186.] *Bees Dying in Hive.—Using Second-hand Hives.*—1. Kindly give me your opinion on piece of comb with dead bees in it, and cause of death of bees. 2. Also, what is the substance in cells of comb? The four front combs in hive were in similar condition to enclosed, with no honey in them at all. All bees on frames in the rear of those mentioned appear to be all right, with honey in several combs. 3. I have some second-hand hives that have been neglected, and in consequence there are maggots in places. Would you advise painting inside after being washed with Calvert's No. 5 and dried?—W. W., *Swindon, March* 15.

Reply.—1. Bees have been chilled to death. 2. Old pollen only. 3. Yes.

Bee Shows to Come.

June 5 to 8 at Windsor.—Bee and Honey Show in connection with the Royal Counties Agricultural Society. Several classes for past season's honey. Schedules from A. D. Woodley, Hon. Sec. Berks B.K.A., 17, Market-place, Reading. **Entries close May 13.**

June 9 and 10 at Epping.—Show of Bees, Honey, and Appliances in connection with the Essex Agricultural Society. Schedules from Mr. G. F. Offlahertie, Monghyr Cottage, Loughton, Essex. **Entries close May 17.**

June 19 to 23 at Maidstone.—"Royal" Agricultural Society's Show. Bee and Honey Section under management of the B.B.K.A. Schedules from E. H. Young, Sec. B.B.K.A., 12, Hanover-square, London, W. **Entries close May 1.**

September 6 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 30.**

Notices to Correspondents & Inquirers.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

W. T. Hannam (Bude).—*Driving Bees.*—Full directions for this operation, with illustration from life, appear in the "Guide Book," price 1s. 8d. post free from this office.

Butcher (Westmoreland).—*Moving Bees Seventy Yards in April.*—It will hardly be possible to avoid some loss in moving hives seventy yards just now when bees are flying daily. The loss can only be minimised by temporarily altering the appearance of the hive entrances as much as possible so that the bees will at once notice the change, putting a small branch of a tree across the entrance will answer fairly well.

Saxon (N. Wales).—*Starting Bee-Keeping.*—For a beginner with no previous knowledge of bee-keeping it is safer and more likely to lead to a successful result if new hives are bought and stocked with natural swarms in May or early in June.

G. S. (Glos).—*Working "Wells" Hives.*—Bearing in mind that the main feature of the "Wells system" is keeping the two queens apart, while allowing the workers free access to a surplus-chamber common to the bees of both compartments, we cannot conceive how the principle involved can be adhered to if no excluder zinc is used above the two brood-chambers as proposed. As, however, "G. S." is now possessor of forty "Wells" hives we will gladly give the details of his proposed plan if he will forward same for publication.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held at 105, Jermyn-street, S.W., on Friday, April 7, Mr. E. D. Till, occupying the chair. There were also present Messrs. R. T. Andrews, H. W. Brice, W. Broughton Carr, W. H. Harris, J. H. New, F. B. White, and the Secretary. Apologies for non-attendance were received from Miss Gayton, Messrs. H. Jonas, E. Walker, C. N. White, and T. I. Weston.

The minutes of the previous meeting were read and confirmed.

Seven new members were elected, viz :—Lewis Belsham, Heybridge, Maldon, Essex; C. E. de Bertodano, 47, Victoria-street, Westminster, S.W.; Major Geo. Campbell, Woodside, Ainsdale, Lancs.; John Edwards, Callington, Cornwall; Fredk. Garnett, Well, Bedale, Yorks; Miss Gertrude Mickelthwaite, Penheim, Chepstow; Miss S. Ouseley, Cockington, Torquay.

The report of the Finance Committee, giving details of receipts and expenditure to March 31, was received and adopted.

Mr. W. H. Harris stated that arrangements had been made by the Education Committee for the forthcoming First Class Examination to be held on Friday, May 5.

The following officers and committees were elected for the year 1899-1900: Chairman of Council—Mr. T. W. Cowan; Vice-Chairman—Mr. E. D. Till; Finance Committee—Mr. H. W. Brice, Major Fair, Messrs. J. M. Hooker, H. Jonas, J. H. New, E. Walker, T. I. Weston, and F. B. White; Education Committee—Hon. and Rev. Henry Bligh, Messrs. H. W. Brice, W. B. Carr, R. Hamlyn-Harris, W. H. Harris, J. M. Hooker, P. Scattergood, E. Walker, and C. N. White; Exhibitions Committee—Miss M. L. Gayton, Major Fair, Messrs. R. T. Andrews, R. C. Blundell, W. B. Carr, J. M. Hooker, J. H. New, F. B. Parfitt, W. J. Sheppard, E. Walker, T. I. Weston, and F. B. White.

Mr. Till reported that arrangements had been made for a course of instruction in bee-keeping to be given to the students at the Swanley Horticultural College by Mr. Wm. Herrod, and that the whole of the stocks in the College and Association's apiaries had, with one exception, wintered well.

On the motion of Mr. R. T. Andrews, seconded by Mr. Carr, it was resolved to hold future Council meetings on the first Thursday in each month instead of Friday as hitherto.

In our report of the conversazione which followed the annual meeting of the B.B.K.A. (on page 121 of B.J. of the 30th ult.), we inadvertently omitted to mention that Mr. R. Hamlyn-Harris was good enough to send a packet of German honey-cakes to Jermyn-street, which those present discussed and also "despatched," pronouncing them excellent. Mr. Harris finds that honey in Germany is used much more than it is here in the manufacture of confectionery and comestibles. In France gingerbread and honey-bread are synonymous terms, and we suspect it is much the same in Germany—an "institution," so to speak. We wish it were a national custom in England also to use more honey in our confectionery, it would assist consumption of honey.

THE "ROYAL" SHOW AT MAIDSTONE.

SPECIAL PRIZE FUND.

Reverting to our allusion to the "Royal" Show in June next, on page 131 last week, we print below the full list of donations received or promised up to the time of going to press. Our reference of a week ago was, however, made only with the hope of enlisting the support of "exhibitors," and a consequent swelling of the list of entries. The present object we have in view is to invite attention to the fact that there still remains a small deficit (about £2 10s. 0d.) before the sum added to the prize list for 1899 is made up. And if readers will bear in mind that the £27 odd now at command was contributed by a very small number of persons—about four-fifths of whom will receive no other benefit from their liberality beyond the fact of having helped on a good cause—we feel sure that it needs but a gentle reminder to the many who have not yet contributed to "the hat" in order to have the full sum made up.

Sums received or promised:—

As printed on January 5... ...	£21	3	6
Since received:—			
Collected at B.K.A. *Conversazione*	2	15	6
T. W. Cowan (2nd donation) ...	1	0	0
(Mrs.) C. A. Passingham... ...	0	13	6
R. F. Andrews (Hertford) ...	0	10	0
Jas. Lee & Son (High Holborn) ...	0	10	0
M. Killner (Billinghurst)... ...	0	5	0
John Cotterill (Bowdon)	0	5	0
R. Brown (Somersham)	0	2	6
W. Boxwell (Patrickswell) ...	0	2	6
A. Twinn (Ridgwell)	0	2	6
Elvey E. Smith (Southfleet) ...	0	2	6
Jon Lee (Dunton)...	0	2	6
Edward Williams	0	1	0
	£27	16	0

*** The concluding portion of the obituary notice of "Lordswood" is held over till next week, by which time we hope to have an illustration of "Our Ivy."—[Eds.]

FOUL BROOD (*Bacillus alvei*).

AN INVESTIGATION INTO ITS NATURE.

By Henry W. Brice.

(*Continued from page* 133).

I made many sub-cultures from this plate, and found (as I often did in other sub-cultures) that after the third of such sub-cultures the growth was slower, the forms larger, and the resultant bacilli far less active than when produced either in the larvæ or the body of the adult bee. The same results were noticeable in other sub-cultures made by myself. The plate-culture shown on page 123 (fig. 4) after being dealt with as described on page 133, was sealed up and deprived of its oxygen, and although several weeks have elapsed it still remains on my table *in statu quo*, growth having entirely ceased, and the isolated colonies are just as they were when sealed up. Nor has any further decomposition taken place in the medium (agar) thus showing that the spores of which the whole growth consists are waiting for the life-giving element which will cause them to spring into activity again. In other words, when oxygen is absent *B. alvei* cannot possibly exist. I intend to keep this specimen intact for twelve months from date of sealing up, and in February, 1900, hope to examine and test the contents with regard to the inherent vitality of the spores.

Preparing and Mounting Objects for the Microscope.—For this purpose provide a full supply of "best quality" glass slips (size 3 in. by 1 in.), also a box of round $\frac{5}{8}$ in. (No. 1 or extra thin) cover-glasses. They are made specially for bacteriological work. The cover-glasses must be cleaned and sterilised by washing in hot water in which is dissolved plenty of common soda. After washing, they are well rinsed and placed in strong sulphuric acid for a few seconds; the acid is then poured away and the glasses rinsed again in several changes of pure water, then put into a bottle of alcohol until wanted. When finally polishing these for use as required, great care is necessary to save undue breakages. The contrivance I have devised for this purpose is a piece of wash-leather stretched tightly over the lid of a small wooden box, upon which I place the cover-glass; then, with a "boss" formed of a handy-sized circular piece of cork, covered with the same material, the glass is bossed or polished successfully without being touched by the fingers, and with practically no risk of breakage. When using, lift the now clean circle of glass with a pair of small forceps and pass same quickly two or three times through the flame of your spirit lamp, then, with a platinum needle (or with a glass-rod drawn to a fine point), place one drop of water on the cover-glass. The water used for this purpose should be distilled and boiled for half an hour in a test-tube and cooled shortly before wanted, and kept carefully stoppered until actually required. Take a culture and a needle; "fire" the latter, also the mouth of the tube; remove the plug, insert point of needle in growth, remove, and place the removed portion into the water on cover-glass; then, after "firing," close the tube with plug.

After selecting a culture for operating on, "fire" the platinum needle (*i.e.*, pass it through the spirit flame) and the mouth of tube, remove plug from latter, and insert the needle into the growth, and place the adhering matter into the water already dropped on a glass slip; then, without a moment's delay, "fire" the mouth of tube and plug as before. Next work the matter on the needle about in the water, and thus distribute the material for examination. This done, "fire" the needle—to destroy any germs left on it—and prepare the cover-glass by "bossing" and "firing" as already described above.

The merest trace of the culture on the needle will give many hundreds of individuals, so do not be afraid you have not enough, as it is far from desirable to have the specimen too crowded. It now becomes necessary to fix the preparation by passing the same five or six times through the flame of the spirit lamp, in order to destroy all life and cause the specimen to adhere to the glass. It also facilitates the staining process, especially of spores, the outer cuticle of which in *B. alvei* is very hard and of a horny nature, so that it cannot be stained unless the outer coating or cuticle is charred either by fire or strong acid. I prefer "firing," though the latter method, if carefully used, is of the two more successful in ordinary hands, because of there being less danger of burning up the specimen by over-firing.

Staining is the next instruction to be taken to heart. The *modus operandi* of the two first sections I quote from "Squires' Methods and Formulæ," as follows:—"*Staining Spores:* Cover-glass preparations to be heated much longer than for ordinary methods (half hour at 210 Fahr.), then stained with aqua solution of fuchine, meth: blue, or gentian violet. *Double stain:*—Immerse c.g.p. for twenty minutes in fuchine aniline water heated to 180 Fahr., rinse in water, alcohol, or weak acid; counter-stain with aqueous solution of meth. blue, rinse in water, dry, and mount." By this method spores are red and bacilli blue.

"*Koch's Method for Staining Flagella.*—C.g.p. immersed in 1 per cent. aqueous solution of hæmatoxylin, transferred to 5 per cent. solution of chromic acid. Wash, dry, and mount in balsam" (flagella, by this means brown black). I have not succeeded in this to the present.

The stains I have succeeded with best are the following:—

1. *Löffler's formula:*—

Solution of methylene blue in alcohol	30 parts
Caustic potash, 0·01 per cent.	100 ,,

2. *Zrehl Neelsen solution:*—

Fuchine	1 part

Absolute alcohol ..... 10 parts
5 per cent. aqueous solution of carbolic acid (phenol) ..... 100 „

3. Professor Crookshank's plan is a simple one, and answers for the bacilli fairly well; it is as follows:—

"C.g.p. stained with alcohol solution of gentian violet. Rinse in water, allow to dry, mount in balsam; but the cultures must be fresh to give best results." To prepare, I find the following meets all requirements:—

Aniline water ..... 100 parts
Alcohol solution of gentian violet 11 „
Alcohol ..... 10 „

It will be noticed that all the above stains are germicidal—at any rate, so far as bacilli are concerned. They should be kept in well-stoppered bottles; nor should they be exposed to the air, when in use, longer than possible. They ought also to be occasionally passed through filter-paper.

In staining, flood the whole of the c.g.p. with stain by means of a camel-hair brush, having first washed it in alcohol immediately before using; or pour the dye solution into the hollow of an ordinary watch glass, and float the cover-glass thereon, prepared side downwards. The staining takes from three to twenty minutes, according to the result required, together with the age and nature of specimen, and whether spores, or bacilli, or both. If spores only, or a mixture of both, a longer time is required—say about twenty minutes; if bacilli only, three to eight minutes, according to age of culture and media. To stain successfully requires patience and not a little perseverance, because at one time all will go right in this respect and at another everything seems to act contrariwise, especially when spores are being dealt with. If one good specimen in ten is secured, be content; you are not doing at all badly.

Having stained our specimen the next point is to wash it in several changes of distilled water. This done, it is dried, and should then be tested by placing a drop of water on a "slip," and putting a cover-glass thereon, and making a careful examination under the microscope. If satisfactory, the cover-glass is drawn or slided off the slip, and thoroughly dried before mounting. If not sufficiently stained, the process is repeated. If the preparation is too densely stained and requires the colour reduced; this is effected by either washing it in equal parts of alcohol and water, or in a 5 per cent. solution of sulphuric or nitric acid and water. With the latter great care must be taken not to decolorise altogether, or the whole process may have to be gone through again.

Mounting Specimens. — When mounting, a small drop of balsam in benzine or xylol is placed on a clean slip, and after warming the cover-glass place it upon the balsam, carefully centering same. Keep it in position by means of a spring-clip until properly set, which process will occupy about forty-eight hours. American wood-clips will serve here, or a small appliance to hold six or eight slides can be bought for a few pence. When the specimens are "set" they should be "ringed" or margined with Hollis' liquid glue. If circular cover-glasses are used a turn-table will be necessary to do the "ringing" neatly, but if squares are adopted, suitable lines of the glue can be traced along the edges of the cover-glass. It is necessary to do this well, otherwise the oil used with the lens will destroy the slide. In about two days after "ringing" the slides may be cleaned with oil of turpentine, labelled, and completed.

Identification by the Microscope and Classification.—When it is understood that the air we breathe, the water we drink, our very bodies and all things about us are crowded with micro-organisms, many of which are absolutely necessary for the welfare of all and every living thing, seeing also that these minute organisms have important duties to perform in the economy and evolution of nature, it will cause no surprise to say that in the tissues of every bee (healthy or otherwise) taken from a hive are found some forms of living organisms. These are, however, almost without exception, what may be termed beneficial germs. To understand this fully let us look a little beyond the surface. The word microbe was adopted by Pasteur as signifying a small living organism. Bacteria and bacilli, on the other hand, are names given to germs mainly producing disease. The grape-vine, according to Trouessart is affected by over one hundred microbes of different kinds. Every organic substance when putrifying or resolving into its original and primary constituents serves as a habitat for myriads of microbes; they are the natural scavengers of the earth, clearing it in a great measure of decaying and dead matter and turning complex substances into soluble and nutritive compounds necessary for the general welfare. This may be difficult to realise; but it is so, and they exist, as I have said, practically everywhere and in almost everything. They are, however, mainly useful and non-pathogenic organisms. But there are also others of an injurious nature to animals, as we understand them, as to which I do not propose here to deal with, save those injurious to bees. Disease germs, however, whether inimical to man or bees are the spores or seeds of the microbes, and these microbes may well be described as the invisible agents of life and death, for so it is. When we take a bee from a healthy hive more than one specie of microbe will be found therein on dissection, some in the bacilli form. But these must not be mistaken for *B. alvei*, and in order to prove what they are it is necessary to make a cultivation (perhaps two or three) in order that their morphology may be ascertained. There are distinctive features in all in many directions, viz.:—*B. alvei* under cultivation form chains of bacilli (leptothrix), while none of the other bacilli

found in the body of bees do so. They are also much thicker than *B. alvei*, and are clostridium in shape—that is, larger at one end than the other—resembling the tetani bacillus when about to spore. Others differ from *B. alvei* by being square at the ends, very much like B. anthrax and B. subtilis (a common bacillus found in the earth and decaying matter, hay, grasses, &c.), but *B. alvei* have rounded ends.

These points require careful study and examination in order that we may be able to differentiate one from the other. As a rough guide for detecting them, it may be taken that the undoubted beneficial bacillus are found in comparatively small numbers—often in pairs —together with some *cocci* and *diplo-cocci*. They also never discolour the intestinal or alimentary canal of the bee, nor are they easy of cultivation, and they grow very slowly, whereas *B. alvei* is easily cultivated, and discolouration in a greater or less degree rapidly takes place; while so quickly do they multiply, as to be soon found in crowds, to the exclusion of other forms. The rod-shaped forms—rounded at ends—are often found in chain-like lengths.

In making an examination of living bacterium under the microscope, place the matter being dealt with on a glass slip, and add thereto a drop of water and a little aqueous meth: violet or fuchine solution. On examination under a cover-glass, the stain will be seen to be gradually absorbed by the living organisms without materially affecting the solution containing them, and, although stained or dyed, they will live and grow for some hours in such a solution if the stage is heated to about 65 deg. or 70 deg. Fahr.; but if the object is to make drawings or take photographs, it becomes necessary to mount them completely. The average size of *B. alvei* is about 4 μ (micron) in length by $\frac{1}{2}$ μ in diameter (a micron is, as near as possible, $\frac{1}{25000}$ of an inch) but in leptothrix they often measure 2 or 3 mm. (a millimetre, which is about $\frac{1}{25}$ of an inch) in length, and occasionally longer.

(*To be continued.*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

MY BEE-DOINGS FOR '98.

MR. GEORGE WELLS' ANNUAL REPORT.

[3636.] Some of your readers will remember that I have been in the habit of distributing free seeds of the Melilotus and Chapman honey plants to those bee-keepers who care to send me a stamped and addressed envelope for the same. I may say I have distributed a large quantity this year, and I have no more applicants to serve at present, still I have some seeds of both kinds left, and as it is time the seeds should be planted, those who require them should send at once.

In accordance with my annual custom I herewith send you a brief account of my bee-doings for the year 1898. Well, as is my usual practice every spring, I joined up my stocks so as to reduce the number of hives to seven. Two queens being, of course, in each of the seven hives. This operation of joining up is done about the middle of April, and in this part of Kent the season of 1898 opened most favourably, the bees having gathered some very nice honey; but the weather soon changed and we had a great deal too much wet, which lasted until the best time for honey-gathering in our district had gone by. Not only so, but when the change did at last come, the weather was too dry for honey yielding for more than a day or two at a spell; but whenever a change occurred and there was any to be got, my bees lost no time in bringing it home. In this way, then, at the end of the season I found myself with 100 very fair sections of comb honey and 490 lb. of extracted, the total yield thus being a little over 84 lb. of surplus per hive. I also melted down a goodly number of old combs, and these, together with the cappings, brought my wax-cake up to 35½ lb. in weight. Some of the sections were sold at 1s., and others as low as 6d. each, while the best of the extracted honey realised 9d. per lb. The remainder varied from 8d. down to 6d. for the darkest. I may, therefore, safely estimate the whole at 7d. per lb., and this makes my financial results work out as follows:—

100 1-lb sections at 7d.	£2	18	4
490 lb. extracted at 7d.	14	5	10
35½ lb. beeswax at 1s. 6d. per lb...	2	13	3
	£19	17	5
Deduct expenditure during year...	2	11	0
Balance for labour	£17	6	5

bring one penny less than an average of £2 9s. 6d. per hive.

Now, with your permission, I will compare the above with the results got by other bee-keepers in the district:—In arriving at these results let me say I drove about a dozen skeps for friends, and from them the average could not, I think, exceed 7 lb. of honey per skep, and the honey, too, in every case was very dark in colour. I also found many bee-keepers owning frame-hives, who had taken very little surplus in '98, while others got none at all, and some were obliged to feed their bees to keep them from starving. I know of two cases where the bees were left unfed, and they died right out in June.

(*Correspondence continued on page* 146.)

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

We are this week well pleased in presenting to readers a bee-garden picture wherein the honey-bee has had a "Home" for over half a century. Moreover, our venerable friend, Mr. Bartlett—still straight as an arrow in figure—stands on the same ground where fifty years ago he planted his first straw skep, and for the whole of the time, up till to-day, has maintained his love of the craft and fondness for the bees. He has also—while numbering himself at the outset as an old-time bee-man, carefully observant of the antiquated notions of former days—had the good sense to adopt modern methods of bee-keeping in lieu of the skep and the brimstone pit. We may thus regard our friend as a link between the old and new systems of bee-keeping; one who having tried both is found to-day apparently possessing none but frame-hives of good type and made for the standard frame.

In this connection it is especially interesting to note that—speaking only of his own bee-work and experience with his own hives—Mr. Bartlett compares the prices he got for honey between forty and fifty years ago as one-fourth more than is now obtainable; but, on the other hand, the yield per hive to-day is two-thirds more than at the earlier period. Thus the advantage distinctly lies with the present-time bee-keeper.

In response to our request, Mr. Bartlett sends so good and useful an account of his bee-keeping that we print it entire, feeling sure that it will greatly interest every B.J. reader. He says:—

"West, or Bishops Lavington, Wiltshire, is a parish in the northern division of the county, six miles south-west from Devizes, and the same distance from a railway station; the soil is rich loam, sub-soil green sand; chief crops, corn and roots, together with a fair average of sainfoin and other bee forage.

"In this village, upwards of fifty years ago, I placed my first stock of bees in the same garden as is seen in the photo which I send. Having purchased a swarm and paid for them the proverbial piece of gold, and, by a circuitous route, avoided passing over water (so essential to success in those days), I set my hive facing south, with the back close to a semi-circular hedge formed of gooseberry and currant bushes (this was also an "essential"). This, my first stock, owing doubtless to my having taken the above-mentioned precautions, increased and multiplied, and for many, many years, with the help of my better-half and 'the boys,' we watched for the swarms in the spring and sulphured the stocks at the autumn with a business-like regularity.

"That annual rag and brimstone performance of my early days may (as possibly possessing some interest for present-day readers) be described as follows: Having weighed

MR. W. BARTLETT'S APIARY, WEST LAVINGTON, WILTS.

the skeps and finally selected those that were too heavy and those not heavy enough to live, a lump of clay (far too big for the required purpose) was stuffed in at the entrance and bees made captive; and the poor prisoners removed to a suitable place of execution. A hole was then dug, the rag (steeped in brimstone) and brimstone match placed in position therein by the light of a tallow candle glimmering through an old lantern, and after the words 'Are you ready?' the match was ignited, the skep lifted quickly; splash, bang! goes a wet cloth over the vacant stool (now floorboard); the skep is dropped over the sulphur pit, and with a final wailing 'buzz' from the poor bees all was over, the little workers' labours were ended! An occasional cry of 'Oh, father, I'm stung!' allowed sufficient time for complete suffocation.

"Some fifteen years ago a gentleman took up his residence in our village who, amongst other peculiarities, kept bees in boxes, and being myself considered (by those who could not judge) to know something about bees, I was often in request to assist in managing or mismanaging the said bees in frame hives; we were not, however, very successful, and when I tell you that, having extracted honey from frames half filled with brood, said frames were sometimes left in the dairy until the following day before replacing in brood nest, you will readily understand the reason of our failures.

"About ten years ago I purchased a few frame hives and appliances and commenced bee-keeping on the modern plan, and I have been very fortunate in getting good harvests and also in finding a market for my produce, many customers being in London, who, having tasted the honey from my apiary when visiting in the village, have sent requisitions for supplies, which have been repeated.

"I send you a few comparative results of notes kept by myself (regarding my own hive only, of course), to show prices and amounts of honey gathered in a long series of years:—

Price of honey, 1854 to '58, 8d. per lb.
" 1893 to '98, 6d. "
Yield per hive, 1854 to '58, 20 lb.
" 1893 to '98, 60 lb.

"Altogether, from a working man's standpoint, I consider it far more profitable to keep bees upon the modern plan, and it is certainly much superior to the rag and brimstone period for cleanliness and purity."

That such bee-keepers as Mr. Bartlett—in a humble way, may be—leave their mark on the craft is obvious, seeing that after being at the outset thoroughly imbued with old-time superstitions, his evidence helps to confirm the view taken by all level-headed men to-day as to the greater yield of honey secured by modern methods more than covering the lower price now obtained for the product. The wish that many more years of enjoyment "among the bees" may be in store for our old friend will, we are sure, be shared by all BEE JOURNAL readers.

CORRESPONDENCE.

(*Continued from page* 144.)

In all these cases only single-queen hives were kept. In two instances where the bees were worked on the two-queen system fairly good results were secured, but neither bee-keeper did so well as I did myself.

I have now eleven hives in my apiary with two queens in each, but the number will shortly be reduced to seven by the usual process of joining up.—GEO. WELLS, *Eccles, Aylesford, Kent.*

RELIABLE SCREW-CAPS FOR JARS.

DO FOWLS EAT BEES?

[3637.] With reference to the difficulty of getting reliable screw metal-topped honey jars, mentioned in B.J. of February 23 (page 74), I thank those who have written me on the subject; and, while it is evident that we have just cause to complain, the difficulty is naturally greatest among cottager bee-keepers, those with means being better able to defend themselves.

Light Packing-boxes for Honey.—I notice that several correspondents in recent issues of B.B.J. refer to the need of light boxes in suitable sizes for marketing small quantities of section honey. As Mr. Woodley says, on page 133, last week, these boxes would take up a lot of room if nailed together, and he therefore suggests that it would be best to have them in the flat. Now, my own idea would be that boxes should be made to take three, six, or twelve of either sections or jars, then the extra depth for jars will allow room to form a good springy bed for sections. With me the difficulty of getting suitable packing boxes is very great. I have more than once spent half a day in the busy season in quest of the required box, and the execution of orders has been much delayed in consequence. I usually get in two or three dozen of small grocers' "empties," or boxes, in early spring, but these, being, of course, nailed together, take up a great deal of room in my cottage, and viewed from this point are quite a nuisance; they are expensive, too. A large producer in my district makes periodical visits to the principal grocers and buys up the whole of the small empties at 2d. each, and when by chance I am able to secure a few I have to give 2d. each for even the tiniest boxes, and with or without lids they have to be taken at the same price.

Water Troughs for Bees.—After what has appeared in your pages, I do not think any further evidence is necessary to prove the need for keeping bees regularly supplied with water, but I had occasion to call the other day upon a woman who keeps ducks and breeds ducklings. She lives two doors away from a neighbour who had four or five hives of bees. This person last mentioned cannot rightly be called a bee-keeper, because the bees have to keep

themselves and get water where they can. According to the evidence of the duck fancier, the bees visit the drinking-dish provided for the ducklings in search of water, and, to use the woman's own words, she said, "I am frightened of the nasty things, and I knock 'em down and just put my foot on 'em." As my advice was sought in the way of providing a remedy, I recommended placing a dish of water farther down the garden in a sunny spot, and as the corner where the ducklings feed is dull and sunless, the bees will be more likely to go into the warmer and more congenial place for their water, and they will give less trouble. I do not know whether small ducklings are as expert at shovelling down bees, "this side up with care," as old ducks are, but I believe all kinds of fowls get into the habit of eating bees if allowed free access to the apiary. I remember a case being brought to my notice, some years ago, of a colony of bees being kept very weak the whole season through hens eating the bees as they passed to and from the hive.—Wm. Loveday, *Hatfield Heath, Harlow, Essex, April* 7.

THE HONEY BEE 5,500 YEARS AGO.

SIGNS OF THE UPPER AND LOWER EGYPT.

My task relates to a lowly theme,
But the glory is not lowly.

Virgil.

[3638.] Virgil wrote the above lines about the year B.C. 28, but some thousands of years before that date bees had occupied no mean place in the history of the ancients. One of the earliest records is that seen on the cover of the coffin of Mykerinos in the first Egyptian Room of the British Museum, representing the respective signs of the Upper and Lower Egypt, B.C. 3633.

As will be seen by the illustrations (which are carefully copied from the cover of coffin

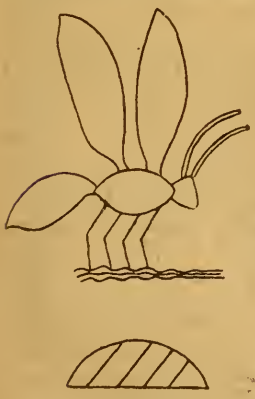


Fig. 1.

Fig. 2.

referred to) the sign of the Lower Egypt represents a bee (fig. 1), while the Upper Egypt is signified by the tongue of a honey bee (fig. 2).

The continual representation of the bee in Egyptian hieroglyphics shows us clearly their economy and comprehension of the idea of a people governed by one sovereign.

"As bees work by their labour," seems to have been an aphorism among the Egyptians of old, the expression quoted being used in a very ancient Egyptian poem as a comparison for arduous manual labour.

The subject is one of very great interest, and it is a matter of congratulation that our favourite the honey bee has always occupied so prominent a position in ancient as well as modern history.

An attempt has been made by men of science to induce the belief that the signs referred to were not those of the bee but of wasps and hornets; however, this is not at all likely, as in other monuments, tombs, &c., the distinct symbols of hives go to confirm the original opinion.—R. Hamlyn Harris, F.E.S., &c., *Villa Rominger, Tübingen, Germany.*

BEE NOTES FROM DEVON.

SALT FOR BEES.

[3639.] My occupation in Devon takes me through rather a wide district, and in my travels I come in contact with a large number of skeppists chiefly of the older school.

In one of my journeys this week I saw one of these old skeppist bee-keepers weeding his flower garden besides his skeps, and the bees quite busy in full flight. I ventured a remark by way of observing that he was not afraid of the bees. His answer was, "Oh, bless 'e, sur, they ne'er touch me, and if they do, I ne'er don't swall out like a lot o' 'em." While we were talking I noticed a lump of something white on the floor-board of one skep, and inquired what it was? He answered, "Sallt." "But," said I, "for what purpose is it put there?" "Bless 'e, sur, they likes it, an' it keep 'em healthy, and they eat lots o' it this time o' year."

I should like to ask bee-keepers who are B.B.J. readers if ever they heard of this plan of keeping bees healthy before?

I find in medicating food or syrup for our bees that salt is added, but should this be an old receipt for keeping bees healthy and successful, one so simple and always at hand must be very useful.

I may say that each skep had a lump of salt near its entrance.

Thanking you for the way in which you answered my last letter, and adding a line to say I have converted another bee-keeper into a journal reader.—W.D., *Bampton, Devon, April* 5.

THE "DICKEL" THEORY.

DOES IT ACCORD WITH B.B.J. TEACHING?

[3640.] With reference to the statements of your correspondent "A. J. Sams" (3626, page 127), permit me to say that I have read the B.B.J. closely since 1885, when the paper came into Mr. Cowan's hands. These years

cover our present junior Editor's connection with the B.B.J., also that of the late Mr. Henderson. Yet I am quite at a loss to perceive from whence any reader can have learned from the teaching of the B.B.J. anything tending towards the "Dickel" theory. I may have been in a dreamy state all this time, but still, I have experimented a good deal to satisfy myself as to the correctness or "otherwise" of what I have read, and I can only suppose Mr. Dickel must be courting something, and that he is courting failure. Your correspondent ignores the fact that queens are frequently reared at times when there is no prospect of their mating.—W. LOVEDAY, *Hatfield Heath, April* 10.

IN THE COUNTRY.

AND AMONG THE BEES.

[3641.] The violet, snowdrop, crocus, and the primrose now in bloom, together with the reappearance of the bees, unite in making one really love the country and its pursuits, and long for the spring to burst forth in all its beauty and newness of life. The weather here just now is charming; sheltered as we are from cold winds by a crescent-shaped belt of trees, interspersed with an undergrowth of brushwood and shrubs, among which latter we see such evergreens as laurel, box, holly, cypress, and the spruce-fir. Above these we have the cedar of Lebanon, yew, Scotch fir, and the holm, or evergreen-oak, above these again, still clad in their winter garb, stand the oak, elm, beech, and chestnut, together with that most beautiful of all trees, the silver birch.

A pair of robins have made their home in the roof of an unused bee-hive, and a couple of goldfinches recently took possession—for family reasons—of an old apple-tree, close to a plot of thistle-heads, among which they are quite at home and thoroughly enjoy themselves. The mavis, too, and the blackbird vie with each other in the sweetness of their morning and evening song, addressed to their respective mates sitting closely on the eggs in the cosy nest below, sheltered from the cold wind. Years come and go, and with them new buds, new flowers, new seasons of life, and new generations of bees ever busy when the sun shines, and ever intent on fulfilling its mission of fertilisation of fruit and flower. To my mind the contemplation of these things, as seen only in the country, bring little rays of sunshine into what might otherwise be rather dark and lonely lives; and the hobby that of all others helps to effect this is keeping bees. With a few hives, a cottage and garden in the country, the flowers around us supplying that enjoyable luxury, honey, free and, at times, without stint, we are in close touch with Nature, and its higher aim and desires, and thus find pleasures denied to those who seek for enjoyment in smoky towns. —BLOWHARD, *April* 7.

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING APRIL 8, 1899.

1899.	Bar. in.	Tem. 9am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
April 2....	30·05	46·0	55	43	12	48·7	—
,, 3....	30·02	48·5	61	46	15	53·1	—
,, 4....	30·02	49·1	58	45	13	51·2	—
,, 5....	30·05	51·1	59	42	17	50·1	—
,, 6....	30·03	49·1	60	42	18	50·6	·21
,, 7....	29·04	48·0	50	44	6	46·9	·17
,, 8....	29·48	37·0	49	37	12	42·7	·07
Means	29·81	47·0	56·0	42·7	13·3	49·0	·45*

* Total, ·45 in.

The rainfall, viz., ·45 in., =10,180·05 gallons, or 45·45 tons to the acre, or 2·25 lb. to the square foot. Mean vapour tension, 0·248 in.; mean relative humidity, 78 per cent.; mean temp. of the dew point, 39°·8. For the week ending April 1, the mean temp., viz., 49°·1 (not 49°·0, as sent in error), was +5°·8, and the rainfall, viz., ·30 in., −·10 in. The mean temp., February 26 to April 1, viz., 40°·1, is −1°·3, and the rainfall, viz., ·75 in., −·91 in. The mean temp., January 1 to April 1, viz., 40°·5, is +1°·6, and the rainfall, viz., 4·95 in., −·16 in.

TEMPERATURE AND RAINFALL

Registered at Duddingtan, near Stamford, Northants.

Temperature January 1—April 1, 1899.

1899.	Mean. deg.	Average. deg.	Difference. deg.
Jan. 1-28	40·4	36·7	+3·7
Jan. 29-Feb. 25	40·9	38·6	+2·3
Feb. 26-April 1	40·1	41·4	−1·3
Means	40·5	38·9	+1·6

Temperature January 1—March 31, 1899.

1899.	Mean. deg.	Average. deg.	Difference. deg.
Jan.	40·0	36·2	+3·8
Feb.	40·4	38·7	+1·7
March	40·6	39·7	+0·9
Means	40·3	38·2	+2·1

Rainfall, January 1—April 1, 1899.

1899.	Rainfall. In.	Average. In.	Difference. In.
Jan. 1-28	2·36	1·79	+·57
Jan. 29-Feb. 25	1·84	1·66	+·18
Feb. 26-April 1	·75	1·66	−·91
Totals	4·95	5·11	−·16

Rainfall, January 1—March 31, 1889.

1899.	Rainfall. In.	Average. In.	Difference. In.
Jan.	2·57	1·89	+·68
Feb.	1·63	1·66	−·03
March	·75	1·38	−·63
Totals	4·95	4·93	+·02

FRED. COVENTRY.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of March, 1899, was £576.—*From a return furnished to the* BRITISH BEE JOURNAL *by the Statistical Office, H.M. Customs.*

Echoes from the Hives.

Wortham Rectory, April 8.—At last the weather allowed me to examine my twenty-seven hives thoroughly on Monday last (April 3). They had all wintered admirably, and were very strong in numbers. Two only were without worker brood, one having none at all, the other only drone brood. The former, I was told, had been clustering below the alighting-board about three weeks ago, as if intending to "swarm." They shall both have a frame of young brood as soon as any can be fairly spared. In all of the other twenty-five there was worker brood, four patches or so in each hive, about the size of the palm of one's hand; less, I think, than I have generally noted at the beginning of April. Hence I argue that swarming will not be early this year; but I do not mean to have any at all if I can prevent it by fair means. Of wax-moth larvæ I found very few, and this I attribute to having gradually discarded frames with a "curf" along the top, having substituted for them some with a groove only along the underside of the top-bar. With this result I am extremely pleased, as I have been much bothered by these "beasties" in former years. Those I did find were in the few remaining "curf" made frames. I have now "fed back" to them about 2 cwt. of their black compound of last summer, which I am rather sorry for, as I have had two or three inquiries as to how much I have left for sale; one from a man who had been buying some foreign honey, and did not find it nearly so good as mine. What can it have been like?—C. C. J.

Ross, Herefordshire, April 6.—From March 26 up to date the bees have been having a fine old time of it, to-day, however, ending in wind and rain. I examined stocks on the 29th and found old-established stocks with plenty of food, and breeding well, in some cases on five and seven frames, and at night their "hum" can be heard some distance from the hives on a still night. The driven lots of last autumn require some assistance by way of syrup. If things continue as favourable through the whole season as it has been up to now, a "bumper" season is before us. May it be so. —D. H. F.

Queries and Replies.

[2187.] *How should Frames hang in Hives? and Various Queries.*—I should be much obliged if you would kindly answer the following queries:—1. Which is the right way for frames to hang in a hive—parallel with, or at right angles to, front of hive? 2. How should sections be placed, parallel with or across the frames? I have some hives in which the frames hang parallel with the entrance and some in which they hang across it. 3. Can carbolic cloths be used over section racks to drive down the bees when taking honey, or would the carbolic spoil the honey? 4. I have one hive which, on examining, I found to be very weak, and could also discover no signs of a queen, though there were two small patches of brood (well advanced) on two of the frames. What am I to do with this hive? 5. At what age is the ordinary larvæ too advanced for the bees to rear it into a queen? Please excuse my troubling you again so soon, but I am only a beginner and desire to learn.—H. S., *Fort Stewart, April* 7.

Reply.—1. Our decided preference is for frames hanging at right angles to entrance, not parallel thereto. 2. It matters little how sections are placed. 3. Yes, if great care is used, but carbolic acid spoils any honey it touches. 4. Unite bees—if worth saving—to the next hive. 5. Three days is about the age limit.

[2188.] *Admitting Bees to Section-racks.*—Being absent from home at supering time, I shall have to get my racks of sections put on by one who knows nothing of bees. I therefore ask: 1. Could I, before leaving, place a board over the frames of brood-nest with ¼ in. space above and below it and a 3 in. in centre and a slide to cover this hole, working like the Porter bee-escape boards do? The novice could then put the sections on and afterwards withdraw the slide so as to let the bees ascend to the super. Or would you recommend me putting on the sections before I leave? 2. How can one tell by looking at a queen whether she is fertilised or not?—Melilotus, *Worcester, April* 4.

Reply.—1. The plan will no doubt answer if well carried out, but we prefer putting the rack in the usual way, with queen-excluder between, of course, and letting the bees take possession when they need surplus-room. 2. Only practice enables the bee-keeper to form an opinion on the point.

TREATMENT OF WASP STINGS.

Many persons who suffer severely from wasp stings at this season of the year will be glad to know of an effectual remedy. Rubbing a little washing soda, or, still better, ammonia, into the wound, as is done in cases of adder bites, affords only a partial relief, but Sir J. F. D. Donnelly, writing in last week's *Nature*, suggests a remedy which appears to be even more efficacious. Having by him some cocaine tabloids (one-sixth of a grain), such as are employed for hypodermic injection, he used one in the case of a lady on whom wasp stings produced large and painful swellings followed by illness for some days. A single tabloid dissolved in a few drops of water, and applied with the finger to the part stung,

at once relieved the pain, and a second application an hour or two after, he stated, completed the cure. Sir J. F. D. Donnelly has since kept a solution of cocaine ready for use, and he has found it effective in all cases. It should, of course, be applied as soon after the sting as possible; but he has found it give great relief even seven or eight hours afterwards. It is well known that wasp stings occasionally produce death. A case was recorded a few days since where a man picked up a fallen gooseberry and placed it in his mouth. This contained a wasp that stung him in the throat, produced swelling that soon caused suffocation. Similar accidents arising from eating fallen plums and other fruits have been not unfrequently recorded. There is no doubt that the hypodermic injection of cocaine into the back of the throat—or possibly the application of the tabloid to the sting—might be effectual in preserving life in these cases. It is quite possible that the application of cocaine might be found advantageous in the case of adder bites. Under any circumstances the remedy would be worth a trial.—*Field.*

[The above, which appears in the *Field* of September 17 last, has been sent on to us by a B J. reader who considers that it may be useful to bee-keepers. Nor do we doubt that Sir J. F. Donnelly's remedy will be efficacious in cases where bee stings are more than ordinarily troublesome.—Eds.]

Bee Shows to Come.

June 5 to 8 at Windsor.—Bee and Honey Show in connection with the Royal Counties Agricultural Society. Several classes for past season's honey. Schedules from A. D. Woodley, Hon. Sec. Berks B.K.A., 17, Market-place, Reading. **Entries close May 13.**

June 9 and 10 at Epping.—Show of Bees, Honey, and Appliances in connection with the Essex Agricultural Society. Schedules from Mr. G. F. Offlahertie, Monghyr Cottage, Loughton, Essex. **Entries close May 17.**

June 19 to 23 at Maidstone.—"Royal" Agricultural Society's Show. Bee and Honey Section under management of the B.B.K.A. Schedules from E. H. Young, Sec. B.B.K.A., 12, Hanover-square, London, W. **Entries close May 1.**

September 6 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 30.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

C. Howes (Bristol).—*Drone Breeding Queen.*—The queen-bee reached us quite safe, and has been introduced to a queenless stock just to keep her alive and well pending a *post mortem* examination, meantime, we ask—have you any warranty for assuming that she is the same queen that "did so well after being mated last season?" We have our doubts on the point and wait your reply.

Davey (St. David's).—*Remedies for Bee Stings.*—The mischief in your case was no doubt aggravated by squeezing the part stung. The best course is to remove sting at once with the point of a penknife without squeezing the part at all. If you wish we will forward a small quantity of the mixture sent to this office some time ago by an eminent medical man who is a B.J. reader, and gave recipe in our pages.

J. Tribble (South Molton).—The shallow-frame sent seems well suited for extracting purposes, but only a trial will prove whether or not a frame 1¼ in. wide is appreciably better than those now sent out as wide-frames. We think you would improve the frame by making it stronger at the junction of side-piece and top-bar.

S. Marsden (Sheffield).—*Naming Source of Honey.*—The sample received has been gathered mainly from heather. It has a good flavour, and so far as colour is concerned, heather honey is always dark. The only thing we don't like about it is the aroma, which gives the impression that there is some admixture of honey from another source unless the previous contents of tin has left its aroma behind. Anyway, we call it a good heather honey.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

WANTED, HONEY EXTRACTOR. Cotterill, 120, Wellesley-road, Croydon, Surrey. 101

FOR SALE.- BEES, heather hive, &c., 27s. Furnell, Vinneyden, Colinton, Midlothian. Z 92

EXTRACTED HONEY. 7d. lb. 30 lb. tins. Second quality 6d. No honey dew. Sample 3d. Ling, Shady Camp, Linton, Cambs. Z 88

SKEPS of BEES, 13s. 6d. each. Foul brood positively unknown in district. Packed and put on rail. G. Knowles, Newnham, Ely, Cambs. Z 89

FOR SALE—7 STRONG STOCKS of BEES in bar-frame hives. No reasonable offer refused. Drury, Knellwood, Farnborough, Hants. Z 90

SMALL APIARY (8 Stocks Bees and appliances). Owner giving up. First reasonable offer accepted. H. Skinner, Bee-keeper, Whittlesea, Cambs. 106

ABOUT 100-lb. GOOD EXTRACTED HONEY. 7½d. per pound. Tins extra; also hives and appliances. Ker, St. Margarets, Ware. 105

BEES.—FOR SALE, 7 strong STOCKS. Hawkins, care of C. Hancock, Registrar, Steeple Aston, Banbury. 104

23rd YEAR.—BOOK SWARMS now to secure early delivery, 10s. 6d., 12s. 6d., 15s. Alsford, Expert, Blandford. 103

FOR SALE.—ENGLISH and ITALIAN BEES in frame hives. T. Hill, Scotlands, Cannock-road, Wolverhampton. Z 99

TWO STRONG HEALTHY STOCKS BEES, 13s. each, packed free. Nasbey, 7, Merton-street, Banbury. Z 98

EXTRACTED HONEY, in ¼ cwts., 4d. lb. Tins free. Sample 2d. Deposit system. Richard Dutton, Terling, Witham, Essex. Z 95

FOR SALE,—HEALTHY STOCKS of BEES in bar-frame hives, with other bee appliances, &c. Apply, Miss Nihill, Bennington, Stevenage. Z 94

Editorial, Notices, &c.

REPLIES BY TELEGRAPH.

Circumstances outside our control compel us to hold over till next week a somewhat voluminous editorial contribution in the shape of Useful Hints, intended for this page. The return of cold and wet weather will, however, tend to make the postponement of active bee-work for a few days longer rather advantageous than otherwise. Meantime, we would just say here that in view of the season having arrived when samples of suspected comb—now being sent for our opinion as to healthiness or otherwise—are becoming pretty numerous, we have decided that, in urgent cases, if six stamps (to cover cost of telegram), are sent along with sample, and the latter is forwarded in tin box just as cut from the hive—*i.e.*, without first poking, or probing, out the contents of nearly every cell, as so often happens—we will "wire" reply within an hour or so of receipt. The only exception to the above arrangement is where microscopical examination is necessary, in which case time must be allowed.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

THE WEATHER.

TITS AND BEES.

[3642.] We read of British pluck and endurance. I think the tantalising changeableness of the weather, endured with more or less patience, in these islands, may have something to do with the formation of "pluck and endurance" in much the same way as the Irishman is said to produce a good bacon pig, by "laying in a streak of fat and a streak of lean" by judicious feeding.

During the second and part of the third week of March we had the warmth of summer, followed by what I thought the coldest weather experienced in the whole winter of 1898-99. The bees have had only now and again a single day—sometimes but an hour or so—in which to enjoy themselves outside the hive during the whole time since. Thunderstorms have been quite numerous for so early a date, accompanied by hailstorms, with severe frost following. I do not remember such a continuance of high winds as we have had here since Michaelmas, 1897. It has been impossible to do the necessary manipulating of the hives, because of the wind, which blew so strong as to make it very difficult for bees to enter their hives, if they took wing. The same thing occurred when returning home loaded. A correspondent of the B.B.J., I remember, a few years ago endeavoured to explain to readers the causes of wind. Perhaps that gentleman will be so good as to refresh our memories on the subject.

Tits and Bees.—Your correspondent who signs himself "White Clover" (3634, p. 136) does not look upon tits as the enemies of bees; of course the tit gives up carrying off live bees while they can live upon pickings from bones and cocoanut, but *our* butcher says that bones are as valuable as meat in winter, and cottagers like myself do not feel able to treat the tits to cocoanut. I hope your correspondent has not got it down in the diary from which his "Notes" are taken that tits are not foes of bees, because the "diary" may be handed down to posterity, and I can assure him that the tits (they are a numerous family) are the greatest enemy that *my* bees have to fight; in fact, they do not give the bees a chance to fight them. The little rascals that visit my garden are up and doing with the dawn of day, scratching with their little toenails and tapping with their beaks at the entrances to my hives, and when I give a look round at the apiary as early as I can get there, it is to find the remains of dead amazons—Mr. Medium Tit's breakfast—in the shape of a large number of freshly-extracted stings, from the bees upon which they have breakfasted, wiped from their beaks upon the alighting boards in front of the hives. I have found as many as from ten to twenty fresh stings in front of every hive. Moreover, my tits are so venturesome; they will set about their murderous work while I am looking on. Nor is it an easy matter to drive them away. I cannot trap the tits, for if I try I am sure to catch a robin, besides there are so many cats about that if I were to trap a tit the cats would probably do more harm than the tits by "going for" the prisoner. Tits are less troublesome when the bees can be kept near the house, because of people moving about. When my bees were located near the house, the common sparrow was the greater foe.—Wm. Loveday, *Hatfield Heath, Harlow, Essex, April* 17.

BEE NOTES FROM LAKELAND.

WORKING FOR HEATHER HONEY.

[3643.] Some time ago I wrote about heather honey, hoping to open a discussion as to the best means of procuring same, but very little came of it; perhaps some of those living in heather districts would be good enough to give us their experience and methods of supering, &c.?

In this locality from mid-July until about the second week of August the bees are very

quiet, and gather but little honey. Once, however, they get a taste of the heather bloom (and there is, to my mind, no honey which can compare with that from it), and provided the weather is favourable, the bees seem to take a fresh lease of life, and honey simply pours in. It is seldom necessary to resort to autumn feeding, for the bees always attend to their own wants first, and are very chary about entering supers until the brood-chamber is fairly well filled.

It is advisable to have sections partly or wholly drawn-out, because I find that bees are loth to do much comb-building unless driven to it by want of room, and as the season is generally very limited, it is better to put all supers on at the commencement of the flow, and not to disturb the bees until they are ready to be removed. Another point to be considered is whether it is advisable to move the bees right *on* to the heather, even though they are located within a mile of it? Personally, I think it is advantageous to do so; nor is it very risky, as regards bee life, to move the hives for even so short a distance as half a mile, for the bees don't fly far just prior to the beginning of the heather flow. I have never adopted this plan myself, but intend doing so this season, and meantime will be glad if any one can give an opinion after fair trial?

Just one more point, and that is as to the use of skeps in preference to frame-hives for the purpose of obtaining heather honey. It my seem a retrograde movement, but I intend hiving some swarms in skeps and removing them to the heather, supering with bell-glasses and driving at the end of the season.—"HEATHER HONEY," *Ambleside, April* 17.

SELLING HONEY.

SIZES AND SHAPES OF JARS.

[3644.] What sized jars or bottles and what kind to use are not unimportant questions. In the south, screw-capped glass jars appear to be the favourites, but in the north the globe-shaped bottles find favour, and they certainly are less liable to leakage. One large bee-keeper gave up the screw-capped because they so often leaked, and it is certain that a semi-liquid like honey needs to be well fastened up. The globe-shaped glass honey jars can be sealed or have metal capsules because of being securely corked, and very rarely leak. Leakage, too, may damage the labels on several bottles, and make them unsightly, and, therefore, unsaleable, and so cause loss and annoyance. The globe-shaped bottles, too, are to my mind very presentable on table. Another very important point is that of size. Why should the 1-lb. size be adhered to, and never varied from, like some law of the Medes and Persians? The globe-shaped jar can be had in ½ lb. and ¼ lb. sizes. "Lipton" and others do not despise ¼ lb. packets of tea, &c. Jam, it is true, is not sold in small sizes, but then jam is cheap and an article of daily use in all households; honey is not, but we want it to become so. Again, honey is sometimes bought for medicinal purposes, a bad cold, &c., in which case the purchaser may only want a small quantity, so he goes to the chemist and buys two or three pennyworth of inferior and possibly adulterated foreign honey, and is consequently not inclined to repeat his purchase; but if he could get a ¼ lb. of genuine honey from the grocer he—or his children—might acquire the taste for honey and buy more. Moreover, honey is oftener in sight at the grocer's than at the chemist's.

The ¼-lb. size is very useful as a sample, and it would be still better if we could have a 2 oz. size to scatter samples more widely. A nice bottle and taking label have much to do with the sale of honey. One of the London dailies, writing of the "Dairy Show," said: "The manner in which butter, and for that matter most other kinds of farm produce, is made up and packed for consignment has a great deal more to do with the sale of the article than is generally supposed." That applies to honey also. "Heather honey" should certainly be so labelled, but unfortunately the only label I have seen is too large for the ¼-lb. size. The Yorkshire, Northumberland, and other English moors ought to produce tons of honey where they now only produce hundredweights, especially as the honey of our moors is not inferior to the Scotch. In Yorkshire the demand for sections is very small, extracted honey being preferred. In London, I know, it is the reverse, and these local peculiarities must be taken account of. Probably the Londoner wants to make sure of the genuine article, even if it is a little woody. As a practical point, I have not had any ¼ lb. sizes returned to me as unsaleable. Of course, they are charged more in proportion to compensate for extra jars, &c.—ALPHA, *Hull, April* 12.

[Our reverend correspondent is evidently unaware of the fact that some of our large honey producers in the south have for years past put up a good portion of their produce in small jars—some holding less than ¼ lb.—for the accommodation of their shop-keeping customers.—EDS.]

EARLIEST FLOWERING PLANTS.

"THE EARLY BIRD" AND EARLY BEE.

[3645.] I copy the subjoined letter from Symons's *Meteorological Magazine* for February, 1891, vol. xxvi., p. 5, in case any of the readers of the B.B.J. may be disposed to become phenological observers:—

"PHENOLOGICAL OBSERVATIONS.

"To the Editor of the *Meteorological Magazine.*

"SIR,—The observations of the first flowering of plants and the first appearance of birds and insects, required by the Royal Meteorological Society, have been now rendered so simple

that I hope all those of your readers who have been in the habit of making similar notes for 'British Rainfall' may be induced to join the Society's staff of phenological observers. It is not necessary that observers should be Fellows of the Royal Meteorological Society.

"The number of plants to be noticed has this year been reduced to thirteen, the number of birds to six, and the number of insects to five. The trees, shrubs, and plants are such familiar ones as the horse-chestnut, hawthorn, and coltsfoot. Of the six birds may be mentioned as equally well known, the swallow, the cuckoo, and the nightingale; while the five insects are the honey-bee, wasp, and small white, orange tip, and meadow brown butterflies. Observers may elect to observe either plants, birds, or insects, or all three, as they may feel disposed.

"I need only add that I shall be very pleased to supply intending observers with forms, and to give any help or further information they require.

"EDWARD MAWLEY,
"Phenological Recorder to the Royal Meteorological Society.
"Rosebank, Berkhamsted, Herts."

—FRED COVENTRY, *Duddington, Stamford, April* 17, 1899.

RELIABLE SCREW-CAPS.

WAX-MOTH IN SAW-CUT OF TOP-BARS.

[3646.] In case of having bought a lot of screw-cap glass honey-jars, which have proved to be leaky, I have remedied the defect by pouring a little melted beeswax over the cork wad. This is quite effectual, and costs little in time or money.

Referring to the mention by your correspondent "C. C. J." (Wortham Rectory), on page 149, of wax-moth larvæ in saw-cut of top-bars, I get over any possible trouble such as he fears by rubbing in a little putty on upper side of top-bar after inserting foundation. I always do this, and have never found it fail, while the trouble is almost nil.—W. E. BURKITT, *Buttermere Rectory, Hungerford, April* 13.

BEE PARASITES (?).

[3647.] Referring to the parasite *Chelifer* mentioned in B.J. of March 30 (3624, p. 126), the matter is of considerable interest to entomologists, and I am sure our mutual friend Mr. Sladen will not take it in bad part if I make one or two additional remarks concerning this species.

I cannot help thinking there must be a printer's error in the name "*canevoides*," as our English species is, I believe, the *Chelifer cancroides*, from two Greek words Χαρχῖνος crab; and ἴδος form. While as far as I know the word *canevoides* has no meaning?

Chelifer is a genus belonging to the family of pseudo-scorpions, and the *cancroides* is generally termed "book scorpion" in Germany on account of its natural love of hiding in old (?) papers in search of food. They are also found in fowl-houses, &c., and as described by Mr. Pocock in the letter on page 126. They live upon mites and ticks as we also read, but in addition to these they devour paper lice (Psosus Domesticus Latr.), so that they may be regarded as distinctly useful.

Their eight legs are all equal, and terminate with two ungues; they move very quickly, and in size, and shape, and colour resemble "our" Acanthea lectularia or bed-louse.

The abdomen is eleven jointed, whilst the first joint of the "taster" or the pair of arms with scissors at the furthest extremity is only fit for sucking purposes.

Several features of all the pseudo-scorpions are that they breathe through two spiracles which lead into the trachea, and that they walk backwards and sideways.

The thorax is nearly square, and on each side one eye is recognisable.

They, however, bear the greatest resemblance to a scorpion deprived of its tail.

If this should meet the eye of your South African correspondent, Mr. E. T. Wells, may I crave forgiveness for asking him through the B.B.J. for a specimen or two of the South African Chelifer if he can spare them? I will gladly bear all expense incurred in postage.—R. HAMLYN-HARRIS, F.E.S., *Villa Rominger, Tübingen, Würtemberg, Germany.*

A NEW HONEY LABEL.

[3648.] I give below a new honey label which differs somewhat from those in use. I employ it as well as a coloured label. It was the result of much thought. It was designed to use with extracted clover honey and heather honey pressed out; hence the phrase, "a mechanical process." No doubt the addition of the words, "untouched by hand" after the word "process" would be an improvement. My object, however, was to make it as terse as possible.

NOTICE.

Only pure Honey granulates or candies; when opaque, it can be made clear by slowly heating the bottle in water.

Caution.—Foreign Honey is often adulterated to prevent granulation. This honey is taken from hives of modern construction, extracted from virgin combs by a mechanical process and quite free from the organic impurities often found in honey "run" from the black and dirty brood combs of skeps; hence its superior quality.

—ALPHA, *Hull, April* 12.

(*Correspondence continued on page* 156.)

HERBERT J. SANDS.

("LORDSWOOD.")

(*Concluded from page* 138.)

The hope we ventured to express on page 118 with reference to a portrait of "Lordswood" has happily been fulfilled by the arrival from California of a print of the photo taken at Rednal Cottage in June last by Mr. Cowan, whom we without delay apprised of Mr. Sands' death. We also reminded him of the "snap-shot" referred to, at the same time informing him that there was no portrait of "Lordswood" in existence, and, of course, no possibility now of procuring one unless his photo was available. Needless to say a print was promptly prepared and despatched, the above being a reproduction of it.

"LORDSWOOD."

Though never intended to serve as a portrait, the little photo conveys a very good idea of our late friend as expressive of the quiet, unassuming manner which was his chief characteristic in life. Nor do we doubt that the pleasure felt in having a permanent record of one we held in affectionate regard will be shared by BEE JOURNAL readers, to whom the literary contributions of "Lordswood" have, we know, afforded a considerable amount of genuine pleasure.

Having some time ago had occasion to write Mr. Sands about travelling south, we took the opportunity of saying how pleased we should be to see him in town when next he came this way. In reply he wrote :—

"Yes, I do sometimes have a run into the great Metropolis, when staying with my sister at Thame, in Oxfordshire. Kew Gardens is the 'loadstone' that impels me towards London. The picture galleries, museums, &c., create in me a desire to escape into a small room to a cup of tea, the tea to be of my own buying and my own brewing. Agricultural and flower shows also have much the same effect, and every time I do go—which is very often—after the crushing and packing into trains (generally with fat women, with half-a-dozen babies in the compartment), after the gorging of one's eyes at the show, and after the return with half-a-dozen inebriated 'Black Country' roughs, I make solemn vows that—'well, never again!' But when the next Show comes round I remember the flowers and the honey, and forget the babies and the roughs, and off I go again!"

In the same letter mention is made of the efforts being made by the B.B.K.A. to obtain legislative powers for dealing with foul brood, and, after expressing his entire concurrence with what had been done and best wishes for the ultimate success of the movement, he goes on to say :—

"It is a fearsome disease, and the knowledge that it is within two miles of you does not tend to make one sleep any the sounder." "About last June," he adds, "I found a young larva dead in a cell in one of my hives, and it made me have a queer feeling come down the small of my back! But nothing came of it, fortunately (the bee, not the back). I found out the bees—*i.e.*, the coroner bee—had been holding an inquest on him, and the jury had returned the following verdict: 'That young bee No. 52,479 had died from malnutrition caused by the neglect of a certain nurse-bee or nurse bees unknown, and that a charge of bee-slaughter is to be made against a certain nurse bee or nurse bees when found out.' If it had been foul brood, the verdict would have been 'Death from natural (?) causes!'"

We conclude the extracts from our friend's letters with the following, written subsequent to one we had from him complaining of the poor honey season up to almost the middle of July :—

"Thanks for your letter. It is very good of you to find time to write me, when, owing to Mr. Cowan's absence, you must be indeed hard-pressed with work and having to reply to all those wearisome beginners' questions in both journals. I often wonder at your giving

such full replies. Don't you think you might now publish a book entitled 'Inquire Within upon Everything,' so that beginners might speculate in one at the start and not worry you any more? I should say since first becoming an editor you have answered every imaginable query on bee-keeping that ever can be—well—imagined, and that it is now all reiteration. If I had the job I am afraid they would have to put up with a lot of 'yes' and 'no.' It is not only the writing but *thinking out* the proper answers.

"Almost from the very moment I worded my complaint in my last letter—about the season—the weather changed. The chilly feeling went out of the wind and the bees started "fanning" at the doorways. And then the limes came out in blossom, as you could easily tell without stirring a foot from home; for what else—what other flower—will tempt bees to turn out in droves from early morning till dusk? They have now had five days of it, and already the hives are inundated with honey. Instead of the empty entrances of a few days ago, a thousand bees are promenading on the sloping terrace in front, while a hundred more put up their backs and "fan" as if they could see the combs melting and tumbling down inside! A few more days, with the sun shining as now, and there will be something to harvest after all. Would that we had a few hundred acres of Cumberland heather for them! Then we could, I think, endure all our neighbours' goats, fowls, dogs, cats, horses (a horse has been through my fence lately), children, and last but not least, the neighbours themselves, with perfect indifference. Limes and heather and fields of sainfoin and white clover and wild thyme growing so thickly that the bees need never take wing but walk and tumble from blossom to blossom all day long; and fields of beans and the orchards of Kent for early pasturage. With all these growing together and the clouds and winds properly managed, how happy might we be!

A CORNER IN "LORDSWOOD'S" GARDEN.

"Especially if there were no Salvation Army or steam-whistles, or rag and bone and watercress men, or policemen with their mammoth tread in the dead of night; but at the same time we should want a good population of young people, for if we had to rely on the elders for the consumption of our honey the supply would very greatly exceed the demand; and as soon as that happens bee-keeping isn't half so nice somehow. The honey isn't so sweet, and really the bees' "hum" becomes more like a telegraph pole when the wind is playing on the wires. It is positively annoying how often the hives want a coat of paint—when the supply is greater than the demand!"

The visit to Rednal Cottage of Mr. Cowan and the writer, of which mention has already been made, was a very enjoyable one, not a small part of the pleasure experienced by the Junior Editor being his participation (mainly as a listener and on-looker it must be confessed) in examining and admiring the hundreds of rare plants seen everywhere around, and which those so deeply learned in such things as our Senior and Mr. Sands could enjoy to the full.

Of the place itself, too, what we had heard of it from Mr. Sands himself was fully justified; the quiet semi-seclusion of the cottage and the beautiful scenery on all sides amply testifying to its attractiveness for so ardent a lover of nature as himself. There was about the charmingly quaint old gardens also such an abundance of "subjects" on which "Lordswood" loved to write that we have taken especial pleasure in re-perusing his delightful contribution headed "Our Ivy" in the B.J. of November 22 last.

This paper—the last he ever wrote—written, too, while in very poor health, and, perhaps, already beginning to feel the probability of a breakdown. But it shows how closely observant he was of all things animate and inanimate in a state of nature. A few lines of quotation from the paper referred to so clearly convey this that we insert them here. He says:—

"Our ivy is probably at least a hundred years old. That great fortress represents a hundred years of patient, unwearied, plodding industry! What limbs and roots it has! How it has grown, and having nothing to climb has fallen over upon itself, and grown again into perennial verdure like a mossy saxifrage! I wish the bee who dusted the stigma of the flower of the bush that bore the berry could have lived to see it in all its glory! I wish the gardener who planted it, and all the children who have gathered its berried branches at Christmas, and all the blackbirds and sparrows that have been merry in its branches were here now, as green, as young, as gay as *it* is to-day! Sad that they should die, and that this tree, this bush, this shrub, this creeper, what is it? this good for nothing but to hold a blackbirds' nest, and feed the remnant of ragged bees and flies of summer—this good for nothing thing should live so long! There it stands, like a great garland, blocking out half the sky and half the stars at midnight. . . . .

"Bats dart round it in the evening like swallows; caterpillars eat of its leaves; moths go to sleep on its flowers; woodlice colonise the country round about with their superfluous sons and daughters. It is the Mecca of all creepy and crawlsome things. It is their shrine, where they doubtless worship their gods. See! there is a toad in prayerful attitude, and there go three rats into the interior of its giant stumpiness. All the elements and all living things delight in our ivy mound. The rain and hail love to rattle against its leaves, the snow to fill its clefts and deep crevasses, the hoar frost to fringe its pale green berries. There the spider weaves his web, here the last drone fly sits in the warm November sunshine, and there the hive bees and a thousand flies hum as if it were September—as if it were Midsummer."

With the above extract we might fittingly close this sketch, but we cannot refrain from quoting the final line of Mr. Sands' first contribution to this journal (written nearly six years ago) that we ever saw, so curiously interesting is its almost pathetic appropriateness here:—

"'Lord, keep my memory green.'—LORDSWOOD."

(W. B. C.)

CORRESPONDENCE.

(*Continued from page* 153.)

NOTES FROM A BEE-KEEPER'S DIARY.

(*Continued from page* 136.)

An envious, sneaping frost,
That bites the first-born infant of the Spring.
"Loves Labour Lost."

[3649.] *Saturday, March* 18.—Bright, but how cold! A cutting north-east wind stops all work in the apiary and garden. When I quoted the old song at the top of my notes last week I was, as our Atlantic cousins say, "too previous." "Spring's delights are now returning," forsooth. So they are—but they have taken the wrong turn. I received to-day a postcard from a lady *who has bees*—note I do not classify her as a "bee-keeper." To do so would be to libel the craft. Well, the postcard *requested* me to call (as representing a county B.K.A.) and see what was the matter with them. I receive many such in the course of the year with requests to "Put on my feeders," then "supers"—"Come and take them off"—"Feed up for me in the autumn," and then, "Thank you, very much," but never a subscription *for* the local B.K.A. I have liked ladies from a child, my delight has been in their society rather than in that of my own sex. But when they get enthusiastic about bees and start a hive or two, and want you at every available spare minute you have—then you get inclined to shirk their charming company. Last year a friend and myself spent two and a half hours one beautiful summer's day putting to rights a strong stock the combs of which had gone wrong. Such a jumble. Only the two outer ones movable. Talk about a "fixed" hive. Here was one with a vengeance. All the other combs curved round at the ends and underneath, and fixed into their fellows. With the aid of the old-fashioned skep-knife, with vertical blade at one end and horizontal at the other, we cut out the mass of brood and stores and undrawn-out foundation which had fallen to the bottom, re-inserted them in the frames; patching here

and there with suitable pieces of brood and comb ; binding fast with tape and lath until the brood-nest at least resembled something like a frame-hive. And then when we had finished and washed our hands and clothes in a bucket of water most kindly provided (at our own request), we were thanked very much for what we had done. Later we removed the tapes and laths, and yet the lady refused a subscription on the grounds that the Association did nothing for her.

Mind, I don't say all lady bee-keepers are the same. I have met one or two who *do keep* bees, but the majority, especially wealthy ones, may be classed with the sample I have given above.

Sunday, March 19.—Awakened this morning (about 5 a.m.) by the chattering of the starlings, which have built now for generations under my chimney. Could not get to rest again, so got up and had a walk round the garden before breakfast. At 7.30 I saw bees flying in and out of several hives, the sun was shining brightly, but the wind (N.E.) was bitter cold, which became intensified as the day advanced. No bees on the crocuses to-day, which remained closed. Snow fell at night.

Wednesday 22.—Last night my thermometer, which is on the west side of the house, registered 12 deg. Fahr., or 20 deg. below freezing. As I was breakfasting, a thrush hopped up the rockery, right to the window, and looked in as if to ask for a share. I put out some more meat-bones for the tits and some lumps of fat and suet. These last, I am told, were soon annexed by the rooks from the neighbouring rookery. They seemed much distressed there at the check given to their domestic arrangements. I begin to quake for my brood. After the energy of last week and the consequent expansion, will the bees be able to keep it all warm ? Well, time will tell. The glory of the crocus has departed and they lie prone and dejected. As I look round, my garden appears very desolate. Awfully glad I did not prune my roses last week as I proposed, but health disposed. An "ill wind that blows." Aye ! Beginning to overhaul my appliances and see what I want—rather late ; but, then, think of the good excuses. No ; mustn't mention them here. Persons interested might demur.—White Clover.

FOUL BROOD (*Bacillus alvei*).

AN INVESTIGATION INTO ITS NATURE.

By Henry W. Brice.

(*Continued from page* 144.)

As a general principle the following phenomena amongst micro-organisms should be borne in mind in this section. C. Slater and E. J. Spelta declare that "These organisms belong to the lowest order of the vegetable kingdom." Other authorities, however, differ, and place them much higher in the social scale. There are three morphological groups : (1) Cocci organisms, whose cells are spherical ; (2) bacilli, rod-shaped, or cylindrical-celled organisms ; (3) spirilla, spiral or corkscrew-shaped. If *cocci* are found they can be at once recognised and distinguished from spores, the latter not being perfectly round, as the cocci usually are, and the latter may be found in bunches or groups ; they are then termed staphylococci ; if seen in chain-like lengths they are distinguished as streptococcus. If in pairs (figure 8 shape), they are called diplococci. These various groups are formed by division in several directions, and differ from bacilli, as in the latter division takes place in one direction only. *B. alvei* is among the largest of its group, and—as with *anthrax*—the spores are among the most resistant ; the differences between bacterium and bacilli consists in the former being straight rods without endospores, that is to say, spores do not form within the rods. The rods of bacilli are also straight or slightly curved, but they spore within the rod itself and not outside.

The common putrefaction germs of the air, water, and soil also form many groups, comprising cocci, bacilli, sarcina, forula, &c., a description of which would occupy far too much space seeing that under the second group alone no less than ten common families exist.

The motion of *B. alvei* in fluids may be termed a side-to-side lashing movement, while cocci move with a circular swing, and spirilla by a rotary movement round the long axis. The spores of *B. alvei*, as already said, are oval and thick-walled. On first shaping themselves they seem to absorb the protoplasm of the bacilli, which are formed centrally, and not at the poles, like tetani, &c. Again, cocci are very easily stained ; spores, on the contrary, are difficult. When staining spores, care should be taken to decolorise the surrounding matter carefully, otherwise the spores assume an exaggerated size, owing to the capillary attraction of the dye or stain to the organism and the drying of the dye *in situ*.

Identification by Sight.—When once the appearance of *B. alvei* is learnt in a comb containing brood, it is seldom forgotten, and there should be no great difficulty in identifying it in such a case. Mr. Cowan in his "Guide Book," after describing the appearance of healthy larvæ as being plump and of a pearly whiteness, says : "When a colony is attacked as the disease develops, the affected larvæ begins to move unnaturally ; and is no longer plump in appearance, it becomes extended horizontally in the cell and has a flabby aspect which indicates death. The colour now changes to pale yellow, afterwards turning to brown ; the dead larva then begins to decompose and eventually shrivels up leaving nothing but a

dry brown scale, which adheres to the side of the cell." Later on the author says: "On inserting the end of a match" (during the decaying period) "it will, on withdrawal, have adhering to it—as a *putrid, ropy, tenacious, coffee-coloured mass*—all that remains of the dead larva, often (but not always) emitting a most disagreeable stench. Eventually this mass dries up as explained above; later on the bees become inactive, losing much of their desire to fly abroad, &c." This is a most fitting and exact description, and I have quoted it fully because it would be impossible to give a better idea of the appearance of a comb of larvæ affected with the disease.

Wrong impressions are, however, often arrived at by the inexperienced bee-keeper, who not seldom mistakes chilled-brood for diseased. But there is a distinct difference between the two. Chilled-brood is never ropy, nor does it turn brown. After death the larvæ assumes a greyish colour, then becomes almost black; the dead larvæ, too, is always removed by the bees in strong colonies, and emits no offensive smell.

So far as my investigations have gone—and they are still far from complete—I strongly support Hilbert's contention (published in 1875) that the *B. alvei* is a disease of the bee and not of the brood proper. In all cases of diseased stocks, where I have tested the adult living bees, they have been found affected; also in the case of queens, with one exception. I have not yet examined drones, but shall do so, and have little doubt of the result. The term "foul-brood" is thus in some measure misleading. That the brood is very largely affected goes without saying, but the disease certainly exists primarily in the adult bees and queens. In attempting a cure, therefore, one of the first steps is to get the bees off the diseased combs and on to clean frames fitted with starters only of foundation; then, after feeding them liberally with medicated food for a few days (and before eggs are hatched) to requeen. I shall have something further to say on this point later on.

Identification by Cultivations.—A further and important means of identifying disease—whether *B. alvei* or the dysenteric germ—is the action and phenomena undergone in cultivations on various media, each producing special forms according to the particular type of organism cultivated, and yet no two organisms producing the same results in all respects. I only propose to mention a few of the most prominent among the various tests, but these will place the identification of *B. alvei* beyond doubt, as verified by my own study and repeated experiments. In the earliest stage of the culture a slight cloudy growth presents itself over a limited area, which, if examined, will be seen to have fimbricated edges; these rapidly extend, generally downwards, and slightly in a lateral direction toward the moisture at the bottom of the tube. In thirty-six hours—if the culture be on agar—it presents a yellowish, creamy, slimy mass; in from two to three days a whitish matter will be found floating in the liquid at the foot of the tube. In gelatine, in twenty-four hours, a cloudy appearance first presents itself, and in forty-eight hours liquefication commences by pitting of the medium, and a slight opalescence is seen in the fluid. After this stage liquefication is very rapid, especially at 78 deg. Fahrenheit. On potato the earliest growth is not apparent to the eye, but in three days the yellow putrescence stands up in comparatively large beads, all growths are downwards. In both agar and potato the isolated colonies first seen have the appearance of small beads (see fig. 4), which soon spread, and eventually run into and over each other; this is well seen in fig. 3. In broth and milk these growths are not noticeable. But whatever media is used where spores are abundant, they form a skin-like covering on the surface of the liquid. In litmus agar the growth presents no acid reaction, but has a slightly purplish appearance. In milk it produces coagulation in a few hours. *B. alvei* is readily stained with methylene blue and gentian violet, slightly with carbol fuchine, and is easily decolourised with dilute acids. In examining colonies a low power should be used, a $\frac{1}{4}$ in., $\frac{1}{6}$ in., and $\frac{1}{8}$ in. objective being most suitable, with a No. 1 or 2 (A or B, English) eyepieces. Slides should be made at intervals and examined under the microscope, $\frac{1}{12}$ in. oil immersion being used. Cultures containing cocci or other adventitious germs should be discarded.

(*To be continued.*)

METEOROLOGICAL

Observations taken at Duddington, Stamford, Northants, for the Week ending April 15, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
April 9....	29·82	44·2	53	35	18	43·6	·30
,, 10....	29·49	53 0	57	41	15	48·6	·04
,, 11....	29·64	41·7	49	37	12	42·7	—
,, 12....	29·77	40·9	52	30	22	40·5	·02
,, 13....	29·10	41·5	51	34	17	42·1	·23
,, 14....	28·93	40·9	43	40	3	41·4	·20
,, 15....	29·14	43·0	48	40	8	43·8	·04
Means	29·41	43 6	50·4	36 7	13·7	43·2	·83*

* Total, ·83 in.

Mean vapour tension, 0·222 in.; mean relative humidity, 77 per cent.; mean temp. of the dew point, 36°·7. The rainfall, viz., ·83 in., =18,777·09 gallons, or 83 83 tons to the acre, or 4·15 lb. to the square foot. For the week ending April 8, the mean temp., viz., 49°·0, was +4°·5, and the rainfall, viz., ·45 in., +·03 in. The mean temp., January 1 to April 8, viz., 41°·0, is +1°·6, and the rainfall, viz., 5·40 in., −·13 in.

Fred. Coventry.

Queries and Replies.

[2189.] *Increasing Stocks by Dividing.*—In the "Guide Book" you especially urge the importance of having young queens, and as I wish to act up to your advice and also to be my *own* bee-keeper, would you be good enough to help me by answering my question (I fear rather a long one) through the B.B.J.? I have three hives. No. 1 (which I have made myself) has an entrance at side as well as in front, and contains ten frames; No. 2, an ordinary hive; and No. 3 (which is at present empty), a "Wells," with entrances at opposite ends. I therefore ask, can I carry out these operations with any chance of success, in order to have young queens, and without the usual three weeks' "interregnum"? In No. 1 move three or four frames, with queen, to side, closing them in with division board, and open side entrance. Start queen-cells in the other part with entrance in front. Turn hive round to regulate the incoming of flying bees. When cells are ready, make a nucleus from No. 2 and place in No. 3 with a queen-cell. When queens are laying, destroy old queens and unite. Brood-rearing will be going on all the while, and no time lost. Can I do better than this with the means at my disposal?—"Keeper," *Loughton, Essex, April* 15.

Reply.—The idea is a novel one so far as our personal experience goes, but if the two parts of the divided stock in No. 1 are carefully watched as regards keeping both provided with bees, the "parting" has been effectually secured, we see no reason to fear failure. Suitably warm weather will, of course, be chosen for operating.

[2190.] *Drone-breeding Queen.*—Referring to your reply on p. 150, I note your "doubt" in B.B.J. this week *re* my drone-breeding queen, and it was because of the what I may call "mystery" in the thing which made me trouble you with it. I will try and make clear all the circumstances and leave you to judge of them yourself. Early in July last I "set" a comb of eggs for raising young queens. On the 15th I made up four nuclei, and placed in each one of the finest cells I had; the young queens from these all hatched on the 18th, and by August 5 each had begun to lay. I nursed and watched them well into the autumn, when they were packed down for winter, which was early in October, with plenty of bees and stores. I am quite certain that each queen was all right the day I packed them down. During the middle of last month (March) I had an "overhauling" day, and though three of these queens were all right, this one was breeding only drones in one comb. I did not examine again until last Monday (10th inst.), when I found a comb of drone cells capped, and two or three hundred miniature drones about in the hive, while the workers were getting very few. These are the simple facts, and upon them I shall be glad of your opinion.—C. Howes, *Bristol, April* 15.

Reply.—The result of a *post-mortem* examination, undertaken on receipt of above, fully verified our first view of the case, viz., that the queen hatched out in July last had been killed or lost in the same autumn and replaced by a successor born after drones had disappeared. Anyway, the bee sent was unmistakably a virgin queen.

[2191.] *Returning Swarms.*—I shall be much obliged if you will answer the following:—1. In returning an undesired swarm to the parent hive, in the evening of the day on which the swarm issued, is it necessary to sprinkle with flour or scented syrup to prevent fighting? 2. Is there a Norfolk Bee-keepers' Association? If so, would you kindly let me know the name and address of the secretary.—Beginner, *Norwich, April* 15.

Reply.—1. No. 2. The Secretary of the Norfolk B.K.A. is Mr. C. J. Cooke, Edgefield, Melton Constable.

SWARM IN MARCH!

A correspondent sends the following from the *North Wilts Herald*, dated March 18:—

"Bees Swarming.—It is a most unusual thing for bees to swarm in the spring. An instance of this occurred, however, in a garden belonging to Daniel Crook, at Fulbrook, on Monday. The bees were no doubt led by the warm sunny weather to think that summer had arrived. They were safely hived after their rash outing."

[Readers having any practical experience will, of course, not need to be told that the above relates to what is known as a "Hunger swarm."—Eds.]

TRADE CATALOGUES RECEIVED.

George Rose, *Liverpool, Preston, and St. Helens.*—Mr. Rose again sends out a large and profusely illustrated catalogue of bee goods and garden seeds combined, which will probably be much in demand by Bee Journal readers, as was the case last year. There are, no doubt, many advantages in making a catalogue both interesting and useful, a fact which is not lost sight of by so wide awake a trader as Mr. Rose. Cultural directions for growing, and hints of all kinds useful to bee-keepers, make his list one that people keep by them for reference; and we are glad to see this feature now being adopted by several of our leading dealers in bee-appliances

JOHN H. HOWARD, *The Model Apiary, Holme, near Peterborough.*—Mr. Howard's is another case in point—a beautifully got up and comprehensive list of bee-goods; paper, tone-block illustrations, and the whole get-up being of very high class. No fewer than fifteen different styles of hives are illustrated, many of them photographed from nature, so that there is plenty of choice to suit all tastes and pockets. Special stress is justly laid on the comb foundation department of Mr. Howard's business, as being the only establishment where "weed" foundation is manufactured in this country.

STEELE & RAITT, *Wormit, Dundee.*—The first catalogue of this newly-combined firm evidences the intention of Mr. Steele, late of Gauldry, and Mr. David Raitt, Blairgowrie (of comb-foundation repute), now trading as Steele & Raitt, to be up to date with everything connected with the craft. Their list for 1899 consists of thirty-eight long octavo pages of well-arranged and fully-illustrated matter for the use and information of bee-keepers. We also note that the firm will endeavour to assist their customers in disposing of their honey in cases where difficulty exists in that direction—a very good idea, and one likely to be taken advantage of.

EDWARD J. BURTT, *Stroud-road, Gloucester.*—This is a small, but very neat and concise, list of bee goods. It has also a few items, to which special attention may be drawn, among them being the supply of boards cut to customers' sizes, for the useful purpose of making their own hives at home. This is a feature which will, no doubt, be taken advantage of by many. Mr. Burtt is also well experienced in packing bees for transit, and those who buy from him will therefore be pretty sure of the safe arrival of "live bees" at their destination.

Bee Shows to Come.

June 5 to 8 at Windsor.—Bee and Honey Show in connection with the Royal Counties Agricultural Society. Several classes for past season's honey. Schedules from A. D. Woodley, Hon. Sec. Berks B.K.A., 17, Market-place, Reading. **Entries close May 13.**

June 9 and 10 at Epping.—Show of Bees, Honey, and Appliances in connection with the Essex Agricultural Society. Schedules from Mr. G. F. Offlahertie, Monghyr Cottage, Loughton, Essex. **Entries close May 17.**

June 19 to 23 at Maidstone.—"Royal" Agricultural Society's Show. Bee and Honey Section under management of the B.B.K.A. Schedules from E. H. Young, Sec. B.B.K.A., 12, Hanover-square, London, W. **Entries close May 1.**

September 6 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 30.**

Notices to Correspondents & Inquirers.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

G. W. N.—*Extractors and Wide Frames.*—An ordinary extractor of the type made by Mr. Meadows will take any width of frame.

J. U. S. (Horsham).—*Remedies for Stings.*—Please refer to our reply (on page 150 last week) to "Davey."

F. M. (Brighton) and others.—Mr. G. Wells' address will be found at the end of his communication on page 146 last week.

"WEB" (Gourock).—*Source of Honey.*—We think the honey is mainly from *trifolium incarnatum*, but the sample is spoiled so far as identification by the admixture of honey-dew.

GEO. ELY (Coventry).—*Queen Cast out Dead.*—The bee sent is evidently the queen of the stock, not a young one as supposed; and what you suppose to be signs of recent fertilisation is simply a severe rupture—the result of a crush probably—which has caused death.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

STRONG STOCKS BEES in Skeps, 11s. each. GEORGE WEBB, Station-road, Swindon. 111

FOR SALE, Three splendid Hives of Italian BEES (cheap). MISS BOSTOCK, Colwyn Bay. 115

FOR SALE, 6 doz. 1-lb. screw-cap JARS '98 HONEY, good colour, 8s. 6d. doz. Also several 1898 Queens, 5s. each. "APIS," *Bee Journal* Office. 113

YOUNG MAN wants SITUATION. Good manager of bees. NASBEY, 7, Merton-street, Banbury. 108

EXTRACTED HONEY.—FOR SALE, 3½ cwts. in 50-lb. tins; sample 2d. OSWALD PRIME, Cosh Farm Elendon, Saffron Walden. 107

200 Good, clean, well-sealed HEATHER SECTIONS. To CLEAR, lot £7. Deposit. WM. CASS, Rysed Apiary, Pickering. 112

FOR SALE, *BRITISH BEE JOURNAL*, June, 1889, to December, 1893; complete, unbound, clean. Apply, LANG, Griffin-road, Clevedon. 110

8 STOCKS BEES, Extractor, Smelter, Sections, Foundation, Dividers, Smoker, empty Hive-Frames, &c. Bargain for somebody. Giving up. Cash offers. H. SKINNER, Whittlesea, Cambs. 114

SPRING FEEDERS. Slow and steady supply of syrup guaranteed by new principle. Indispensable for raising large Stocks. Directions enclosed. Post free, 1s. 6d. each. WILSON, Auburnville, Holywood, co. Down. 109

EXTRACTED HONEY. 7d. lb. 30 lb. tins. Second quality 6d. No honey dew. Sample 3d. LING, Shady Camp, Linton, Cambs. Z 88

SKEPS of BEES, 13s. 6d. each. Foul brood positively unknown in district. Packed and put on rail. G. KNOWLES, Newnham, Ely, Cambs. Z 89

BEES.—FOR SALE, 7 strong STOCKS. HAWKINS, care of C. Hancock, Registrar, Steeple Aston, Banbury. 104

Editorial, Notices, &c.

USEFUL HINTS.

WEATHER.—Although as we write the weather is warm and spring-like, the season of '99 must, so far, be classed as a backward one; indeed, but for a day or two on and off, the bees have by no means got into fair working order, and although we are in the last week of April, little natural food has been obtainable outside the hives. A complete change in the present condition of things may, of course, occur any day, for there is an abundant show of bloom in the fruit orchards of nearly all southern counties. The trees in several districts we know of are just now a perfect sheet of white blossom, but cool winds and dull days, so far prevalent, have prevented the secretion of nectar in the fruit bloom, and bees have been comparatively idle in consequence.

Conditions like these, when everything hangs fire, as it were, tends to create anxious thought in the minds of careful bee-keepers, and the consequent adoption of due precautions against possible danger to strong colonies breeding fast and needing plenty of stores to keep them going. If evidence were wanted—as to the fatal consequences which may easily arise from neglect in the line indicated—it reached us within the last few days in the shape of samples of comb (sent by readers located far apart) in every cell of which was found embedded head foremost—an infallible sign of famine—an adult bee, sound in all respects, but dead from want of food. One of the correspondents referred to—a beginner no doubt—wonders why the bees should have died with plenty of candy-food overhead? A sample of the candy—hard as a stone—came along with bees and comb, and when we are informed that "there was not a particle of food in the combs" the case needs no diagnosing. But considering how simple are the means of avoiding danger it is bitterly annoying to find stocks in April strong in bees and with plenty of brood in the combs, dead from famine.

In view, then, of even the possibility of such disastrous consequences as we have already had two instances reported (and how many unreported?), no further word of warning will, we hope, be needed, but that inexperienced readers will see to the condition of their bees without a day's unnecessary delay. A pint of warm syrup should—in serious cases of impending famine—be poured into an empty comb, and the frame inserted close to the outer seam of bees in the brood-nest. This first supply to be supplemented by a limited quantity of syrup at regular intervals until natural food is known to be coming in. As a final word on this point we add an oft-repeated caution against the easy-going carelessness—so frequent among inexperienced bee-keepers—with regard to the risk of death to bees through starvation in an untoward month of April.

BUILDING-UP STOCKS IN SPRING.—Although quite soon enough, it is not too soon to begin preparing for the early honey season, now close at hand. We have already had encouraging reports of carefully attended-to hives being "full of bees and brood," on the strength of which condition more than one of our readers located in Kent have already made up their minds to enter honey of 1899 for the "Royal" show at Maidstone, in June next. It is certainly promising to hear, as we did on the 20th inst., of hives found on inspection "with bees between every one of the ten frames," but we fear this will be rather the exception than the rule. However, it is now quite time to set about doing all we can to get the bees forward by careful and judicious feeding wherever there is the slightest suspicion regarding scarcity of stores. The incoming of food in spring means increase of brood in hives, and, although we do not advocate entire reliance on candy-feeding at this season, personal experience has proved beyond doubt that the judicious giving of a cake or two of soft candy as a stimulative supplement to stores already in the hive is the best of all methods of brood-spreading, not only because of its increasing the brood, but of avoiding the too frequent mischief arising from parting frames of brood and insertion of empty combs in their stead early in the season.

On the other hand, and with regard to the question of

RENEWING COMBS IN BROOD CHAMBER, we strongly advise the removal, every spring, of a couple of outside combs—choosing the oldest or most faulty ones,

of course—and substituting frames fitted with full sheets of foundation. Then, after the bees have fairly started to build out the foundation, the frame may be placed right in the centre of brood-nest without the slightest fear of chilled brood. By this means we get two new combs built every season, and by gradually renewing the whole not only keep the brood-combs in good condition, but avoid faulty ones, and thus conduce to the comfort of handling workable frames when manipulating our hives.

SWARMING AND ITS PREVENTION.—Amid the many devices, good and bad, introduced of late years in the shape of "non-swarming hives," "swarm preventers," &c., the fullest credit must be given to those who have given time and thought in furtherance of the object of ensuring perfect control over the issue of undesirable swarms. Nor can there be any doubt that, with this end in view, several very good hives have been devised, and are now on the market. The principle involved, however, is nothing more than the well-known axiom of "giving timely room and ventilation," and we quite believe that equally good results will be secured by those who do not care to invest in a non-swarming hive or appliance, by taking an equal amount of trouble (in the application of the "timely room and ventilation" principle) as is required in the working of a "non-swarmer." On the other hand, we consider the newest type of non-swarming hive to be advantageous, apart from the idea of swarm preventing, in that the feature of getting bees to work down into a box of shallow-frames placed below the brood-nest is an excellent one. It saves the time so frequently wasted by bees hanging idly outside the hive for days together for sheer want of room inside. Moreover, the subsequent removal of combs and bees—when the latter have got fairly to work—to a position above the brood-nest, does away with the frequent reluctance of bees to pass through excluder and enter surplus-chambers.

CELLULOID FOR QUEEN EXCLUDERS.—This new material will doubtless receive full trial during the coming bee-season. Two samples of queen excluder made from celluloid have been sent for editorial opinion, and both promise well if not too costly; but we venture a friendly "hint" to the makers by urging (1) that the perforations be made to run across the top-bars of frames instead of parallel to them; (2) that the pattern of excluder known as the "B.B.J."—an illustration (exact to size) of which is shown on page 58, of "Guide Book"—be adopted in preference to those sent. We urge this because the several considerations taken into account by the editors of this journal when fixing upon the size of perforations and their distance apart apply with more than equal force in the case of a material like celluloid. Nor is there the slightest apparent reason for any departure from the original pattern, of which we think the makers themselves will see the obvious advantages on comparing the two.

"REPLIES BY TELEGRAPH."—We are pleased to find the offer made on p. 151 last week being so soon availed of by readers, but must add a word in consequence of one correspondent, to whom we "wired" reply, stating that he expected "a full reply by post would follow." We therefore beg to say that while anxious to render all the help in our power, it is mainly because of inability to engage in private correspondence with all those who expect it that we have undertaken to forward replies by telegraph. Besides, we ask, does it not seem unreasonable, after all that has been said on the subject in our pages, and the full information regarding foul brood contained in the "Guide Book," for readers to write, "If it is foul brood, please send full instructions for dealing with it"?

LAST DAY FOR ENTRIES at "ROYAL" SHOW.—This being the last issue of B.J. before the date of closing entries, we venture to remind readers that entry forms should be got at once in order to be posted on Saturday next, Monday, May 1, being the last day for receiving entries at ordinary rates.

STAFFORDSHIRE B.K.A.

ANNUAL MEETING.

The annual meeting of the members of the Staffordshire Bee-keepers' Association was held in the Guildhall, Stafford, on Saturday, April 15, Mr. A. H. Heath (the President) occupying the chair. There was a large attendance of members. The Chairman said he was glad to know that the Association was in a flourishing condition. In the early days of

scientific bee-keeping in the county, the Association had to do all the work of education; but now the County Council had taken up the work of technical instruction, consequently the Association had been relieved of labour in that direction. He was satisfied that this was to their advantage. The Association could, however, render assistance by pointing out to the Technical Instruction Committee where they could find work to do. The statement of accounts showed receipts £42 10s. 8d., and expenditure (including £17 10s. 6d. loss on the Burslem show) £39 17s., leaving a balance in hand of £2 13s. 8d. The report of the secretary stated that there had been a substantial increase in the membership during the year. The number of members was 166, against 147 in the previous year. The report was adopted. The following gentlemen were then elected to the respective offices named:—Mr. A. H. Heath, president; Mr. W. G. Bagnall, vice-president; Mr. E. E. Crisp, hon. secretary and treasurer; Mr. E. W. Turnor, auditor; and Mr. R. Cock, expert. The committee were re-elected, with the addition of the Rev. G. C. Bruton, Great Heywood, and Mr. Denton, Wolverhampton. In accordance with the annual custom, a draw took place for a guinea's worth of goods; Mr. John Stubbs held the lucky number. A vote of thanks to the Chairman closed the meeting.—*Communicated.*

IRISH BEE-KEEPERS' ASSOCIATION.

The annual general meeting was held on the 20th inst., by kind permission of Dr. Traill, in his rooms at Trinity College, Dublin. Mr. Read presided. The report, which was adopted, shows a great increase in the number of members. Instruction in bee-keeping had been continued with excellent results at the Glasnevin Apiary, and lecturers had attended the shows of the Co. Galway Horticultural and Cottage Industrial Society, and the Kilkenny Agricultural Society. Four new local bee-keepers' associations had been started in the country, and affiliated to the Irish Association. Special efforts had been made to facilitate the sale of honey, and, in addition to what was sold at the depots, a considerable amount was taken by dealers in London and Glasgow from members who had been put into communication with them. Prizes had been given at country shows, and the usual aid afforded in connection with the honey exhibits at the Royal Dublin Society's Winter Show.

A resolution was passed that delegates from local associations should be ex-officio members of the I.B.K.A. Committee.

Mr. Chenevix and Mr. Read were re-elected Secretaries, but as regards the former this is only a temporary arrangement, as he wishes to retire from office.

A vote of thanks was unanimously passed to Dr. Traill for kindly lending his rooms for committee and other meetings.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

*** *In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

NOTES BY THE WAY.

[3650.] The month of April is fast drawing to a close, and yet the weather continues cold and the fields remain bare. The hardy coltsfoot and dandelion show the main crop of blossom in the fields, and in the woods we have a few wild cherry-trees showing bloom in sunny, sheltered positions. There is also a sprinkling of blossom on the plum trees, but too scanty for the promise of either a large crop of honey or fruit later on. Bee-keepers who would keep their stocks growing in strength must give that needful help until we get warmer weather and more abundant forage; this "help" may take the form of syrup or candy. The syrup food may be given to only those stocks actually needing it, or it may be placed in shallow pans in the apiary with a handful of straw laid on the syrup to prevent the bees being drowned. No doubt this open-air feeding is the nearest approach to naturally gathered stores, and thus most likely to start or induce continued breeding; and as we are now within six weeks of the white clover bloom, it is quite time the brood-nest began to grow in size, and the colony increase in strength. The young bees bred during the next month will not only be the gatherers of the prime honey of the early harvest, but will form the early swarm and nurse the early raised queens of 1899.

Again, when the colony becomes strong, with an extended brood-nest, do not forget that a corresponding amount of food is required, and so do not let the stores run short now, or the best stock for want of a little forethought may go back instead of forward, and although they may linger along without help, their usefulness is lost for the season.

Reliable Caps for Honey Jars.—I notice Mr. Loveday (3,642, p. 151) thanks those who have written him *re* reliable screw-capped jars for honey. I may say, however, that in the last crate I had from the firm with whom I deal they sent me tin caps, and every cap fits; some, indeed, rather too tight, as I have found a few bottles broken from the caps not giving or stretching as the soft metal ones do. This could be remedied if an iron casting of the bottle were made and each cap screwed on the iron dummy first, but tin caps are a decided improvement on the soft metal ones,

in my opinion, and save a lot of annoyance when bottling honey for market.

Buying Queens in April.—I have had inquiries for queens during the past fortnight; and, regarding such inquiries, I wish to say if dealers have goods for disposal, they are always glad to sell under almost any circumstances, but I should not counsel any one to expect a new queen to bring up a stock to supering form if introduced late in April. If stocks are found queenless at that time, or with drone-breeders, it is far better to unite the bees to another stock. Old queens are better superseded after the honey-harvest and preparatory to feeding up for winter than in the spring, because in the spring the colony would probably be weak, and the few bees (many of them bred the previous autumn) would not be able to attend to the brood a young prolific queen would produce; consequently, the colony will not make such progress as the purchaser expects, and the dealer in consequence loses a future order, besides losing what is of greater value to him, viz., a good recommendation from the purchaser. Orders for hives and other goods likely to be wanted should be sent to the manufacturers as early as possible, and those who intend to start bee-keeping should read up the "Guide Book," purchase their hive or hives, place their order for swarms, and by thus taking time by the forelock, their newly-established hive may pay for itself the first season.—W. Woodley, *Beedon, Newbury.*

REPLIES ON FOUL BROOD BY "WIRE."

[3651.] What a luxury to bee-keepers in doubt regarding foul brood! I dare say this will shortly receive notice in the daily papers, with the usual mixed and amusing additions. This indulgence by the editors is a step forward, and I have no doubt will be appreciated by readers of the B.B.J.

What to Avoid—Keeping Bees on an Allotment.—The experience of your correspondent "Sainfoin" (3631, p. 134) proves the statement that I have several times seen in print—that bees can be kept on an allotment—to be incorrect. Well knowing, as I do, bees and their ways, and also non-bee-keepers and *their* ways, the mere reading of this statement has more than once sent an uncomfortable feeling through me. Bees cannot tolerate rapid movements of something or somebody in their line of flight, or where such movements can be seen from the hive. The holder of an adjoining allotment usually comes to till his ground in the clothes worn in his daily work; it may be smelling of something that is offensive to bees. The principal work of the bees has to be done in warm weather, and there is most work to be done on an allotment in the warm season. The worker on the adjoining allotment perspires, and the sense of smell being very strong in bees, this is offensive to them, and they "go for" the offender.

Bounties on Honey.—The Early Wasp.—"It is proposed by the Government of Victoria," says *The Cable*, "to offer a bounty on *honey exported* from that colony."

"The wasp has," says the *Rural World*, "made its appearance in Buckinghamshire." The first wasp that I saw on the wing this spring tumbled against my head in her flight, on April 6. I had found and dispatched some in their hibernating quarters earlier. Colonies of wasps are likely to be numerous this season, for severe weather in March keeps the queen-wasps longer in their hibernating quarters and out of harm's way. I saw the first queen humble-bee of the season on the wing on April 5.

Wax-Moth.—One result of the mild winter is that larvæ of the wax-moth are already in evidence in large numbers, and I think I have never seen these larvæ so large at this date before, some that I have seen this week being about as thick as a wheatstraw. Some colonies of bees in this county last year were reported to have been destroyed by the ravages of the wax-moth; no doubt the bees were weak to begin with. Anyway, the responsibility for this state of things must be laid at the door of bad bee-keeping.—Wm. Loveday, *Hatfield Heath, Harlow.*

FIRST SURPLUS HONEY OF 1899.

[3652.] I do not know if you have yet received reports of surplus honey being gathered, but for the encouragement of others I write to say that on the 20th inst., at Cooling, Kent, I found honey being stored in shallow frames, and at Gillingham, in the same county, on the 22nd, surplus honey was being stored in shallow frames and sections. Of course this is from early fruit-bloom, principally on cherry trees.

Perhaps I should add that the above cases of honey storing came under notice in the ordinary course while carrying out my spring tour on behalf of the Kent and Sussex B.K.A.—M. Herrod, *Expert and Apiarist, B.B.K.A.*

BEE PARASITES.

NOT BRAULA CŒCA.

[3653.] I should be glad to hear if any readers of the B.J. have ever observed any other parasite on bees besides that of the *Braula cœca?* Mr. Withycombe, the expert of the Essex Association, had one of the member's stocks under examination last week when I happened to notice a peculiar thickening of the lower part of a front leg of one of the workers. It was pale brown in colour, and there did not appear to be any movement. On making a closer observation we found that

the "swelling" was composed of several insects, quite different in appearance to the *Braula cœca*, and on detaching them they ran over our fingers at a great rate.

Unfortunately, we had not got a lens with us. The stock of bees, we understood, came from Mr. Whiting, of Hundon, last autumn and it would be interesting to know if he has ever noticed anything of the kind? Is it possible for this to be a parasite of the *Braula cœca* lying in wait for an opportunity to seize on its host, and so prove the truth of the old adage :—

> Larger fleas have lesser fleas,
> Upon their backs to bite 'em,
> And these, again, have smaller fleas,
> And so *ad infinitum*.

—W. J. Sheppard, Hon. Sec. Essex B.K.A., *Chingford, April* 24.

CHELIFER CANCROIDES.

[3654.] I thank your correspondent, Mr. Hamlyn-Harris (3647, p. 153) for calling my attention to the error in the spelling of *Chelifer cancroides*. The *Chelifer* from South Africa has up to the present received no name, but Mr. Pocock tells me in a letter that he hopes to describe it shortly.

No doubt many small animals and insects, without being actually parasites on the bees, or even harmful to them, would be glad, like the *Chelifers*, to avail themselves of the warmth, shelter, or food afforded by the interior of a bee-hive, if the bees had not the means of keeping them out. I have often thought it would be interesting to form a collection of such occasional guests in the hive. Once while examining a hive I found a little *Psocus* (Neuroptera) on one of the combs running in and out of cells containing brood in a very suspicious manner. The *Psocidæ*, though not in the least allied to *Chelifer*, are found in similar places, and from this it might be supposed their habits are somewhat similar. Mr. Hamlyn-Harris says that *Chelifer cancroides* devours "*Psosus*" (*Psocus?*) *domesticus*. Is it not possible that the *Chelifer* from South Africa was looking for *Psocuses* in the hive?—F. W. L. Sladen, *Ripple Court, Dover, April* 22.

BEE-KEEPERS' ASSOCIATIONS

AND SELLING HONEY.

[3655.] The advantages of being a member of a B.K.A. are, I think, not appreciated by bee-keepers to the extent they ought to be. Members have generally a visit from an expert once at least in the season and the advantage of reduced entrance fees at the chief honey shows, besides other benefits which different associations confer.

There is, however, one advantage which might be made more of, and which would probably induce many to join if it were made more general, viz., forming a centre where small bee-keepers might send their honey in bulk for sale, and procuring bee-appliances at wholesale prices. The small bee-keeper having three or four hives has more difficulty in disposing of his honey generally than one who possesses from ten to a dozen hives. If the association would take the honey in bulk and dispose of it to wholesale buyers, I am convinced it would do more to encourage bee-keeping than all the other benefits combined. One reason why some wholesale buyers get their honey from abroad is that they get it in bulk and can rely on a regular supply; but if all the associations would combine, they could offer the wholesale buyers the same terms, and they could also keep up fair prices. It is not sufficient to instruct people how to obtain honey, a market must also be found for them, and until the associations endeavour to assist bee-keepers in this respect, they can never succeed in getting the small bee-keepers to become members, nor fulfil the purpose for which they are formed.—Heather Honey, *Ambleside, April* 17.

[Our correspondent is no doubt expressing his view by referring to what is done (or not done) in some northern counties. In the south, however, every possible effort is made by several of the leading county associations to assist members in disposing of their honey at a fair price. We are also fully conscious of the enormous advantage of a central depôt for supplying wholesale buyers; but there is an almost insuperable difficulty in the way, viz., the high price expected, especially in the north, for honey in bulk. It would tend very much towards an understanding of the question of supplying "wholesale dealers" from a central depôt if this question of price per hundredweight was ventilated by our northern friends.—Eds.]

BEE-KEEPING IN LONDON.

[3656.] I am a bee-keeper of three seasons experience only; the first year was an entire failure, owing to my ignorance of bee-culture, the second season I bought a swarm which again swarmed, and from these two I had ten sections, and about 20 lb. of extracted honey. In 1898—this last season—I worked one hive for increase, from which two swarms issued, and the three are now in good condition, with plenty of natural stores. From the other hive I took fifty sections, thirty of which were beautifully finished, the rest only partly filled and capped; the honey, however, I am told, is of very good quality, both for colour and flavour. Do you not think that this result is very good, seeing that I am situated only just outside the Charing Cross cab radius?—Frank Munton, *Shepherd's Bush*.

[To obtain honey of very good colour and flavour, and in the quantity stated, amid the smoke of London in such a season as that of '98, is not only "very good," but to us very

remarkable. Had we been inquired of as to Shepherd's Bush as a honey district we are afraid our reply would have been very wide of the mark, according to the results recorded above. Your query is answered on page 169. —EDS.]

NOTES FROM A BEE-KEEPER'S DIARY.

(*Continued from page* 157.)

Daffodils,
That came before the swallow dares, and take
The winds of March with beauty; pale primroses
That die unmarried ere they can behold
Bright Phœbus in his strength.—"Winter's Tale."

[3657.] *Good Friday, March* 31.—Incessant rain from morning till tea-time stopped all bee-work and prevented the realisation of my purpose of having a first inspection of my stocks. After tea, however, I gave the first bottle of syrup to stocks Nos. 2, 3, and skep 7—one hole only. The frosts and cold weather have completely counteracted the mild winter, and bees and vegetation are quite three weeks behind time. Still, the crocuses are blooming and daffodils dance on their slender stems. Everywhere you turn they meet your eye—at present only the single and double common daffodil are blooming, but a succession of beautiful varieties will keep the place gay till summer flowers are here. How gracefully they "bob" and wave about. The gooseberries are showing blossom. I am longing to hear the merry "note" of my bees as they pillage the nectar from the little green bells and transfer the pollen to their little baskets as they fly from flower to flower. Have you ever noticed them at work on gooseberries? You hear a gentle whirring noise, then for a little space there is silence while the *ligula* is probing deeply in the well of sweets, the pollen is all the while being brushed from the stamens till the gathering hairs are thickly charged therewith, then the whirring hum again as the well is emptied and off the bee flies in search of untapped blooms. As she flies scraping her body with her two front pairs of legs, and then passing it on to the hinder pair, crossing the right middle leg over the left back one, and *vice versâ*. How many hours I have watched—I had nearly said wasted—the bees on the gooseberry blossoms it would be hard to calculate. For twelve years now, as the spring comes round, the bees and I are there; and so may it be as years roll by—friends may come and go, but seasons and their attendants never change their motto, "*Toujours fidèle.*"

Saturday, April 1.—Fine, but cold. The sun in the afternoon was warm enough to tempt out the bees in numbers, and very busy they were on arabis and crocus. The wind was too cold, however, for manipulation. Turned my attention to rose-pruning. What a havoc the frost has wrought on the new growth! Hand-pruning will be the order of the day if good blooms are wanted. The birds were very mirthful this evening. The love-song to the great tit, or "oxeye" (*Panus major*), "Sit-ye-down, sit-ye-down, sit-ye-down," was very frequent. Then, from the top of a big tree on the other side of my hedge, there comes a burst of song from a little warbler. How its throat swells as it pours forth its song of love!

Easter Day, April 2.—Soon after 6 a.m I was awakened by the bells of our church. How sweetly they sounded. All harshness by their proximity being subdued by the thick thatch which covers my dormer. The sun shone brightly through the little window, and I gave myself up to the luxury of half an hour's idleness till the bells had stopped. I once saw it stated that our feeling in Heaven—if ever we get there—will probably be something like the half-waking, half-sleeping, conscious, yet inert feeling of the delicious doze of a Sunday morning; and certainly nothing could be more delightful than this half hour listening to the church bells and lying looking through "the little window, where the sun comes peeping in at morning." Out in the garden before 7 a.m.—not bad for Sunday. How sweet all nature looks bathed in her morning beams. "Hark! hark! the lark at heaven's gate sings." Higher, higher it soars! What melody, what flood of song! As old Chaucer sung:—

"The busy lark, the messenger of day,
Saluteth in her song the morning gray."

And this brings me back to the bees—and they are thus early working in the crocuses, arabis, and gooseberry bloom, though few of the latter are yet fully expanded.

Monday, April 3.—Bank Holiday.—Now we shall get something done! But all the day is spent dodging the heavy showers. No bee-work beyond refilling the bottles put on last Friday. Evening cold, too. Reminds me of the tale of the Russian who, on visiting this country in December, said: "Why you have no winter here? I was told how dreadful was your country in winter, and, behold, it is mild as possible." "Oh! that's all right" said his English friend, "but wait till you see our *Spring!*"—WHITE CLOVER.

QUEEN WASP IN HIVE.

A "BEE DRIVING" EXPERIENCE.

[3658]. I had rather a peculiar experience a day or two ago when driving a stock of bees out of a very old skep, and thought perhaps some of your readers might care to hear of it. When the bees were running up I noticed a queen wasp run up with them, and, of course, immediately killed her. Now the strange part of it is in the fact that they were queenless, and seemed to accept the wasp as a substitute, as none of the bees attempted to molest her. Had she killed the queen and usurped her position?—"A COCKNEY BEE-KEEPER," *Streatham, S.E., April* 24.

CHAPMAN HONEY PLANT.

FREE SEEDS FOR SOWING.

[3659.] I received free seeds of Chapman honey plant from your office in 1895, and from them grew some fine plants in 1896, but finer still in 1898, when they reached the height of 9 ft. 10 in. I am very fond of my bees, and like to see them at work, which I can do in perfection on the Chapman honey plant. I only keep five stocks, four in frame-hive and one skep, the latter for the sake of old times, when my father used to run after swarms, rattling away with the door-key and fire-shovel. Nor can he yet see, or admit, that the new way is so much the best. I will send seed to any one forwarding stamped envelope. — GEO. KEELEY, *Hurstmonceaux, Hailsham, S.O.*

FOUL BROOD (*Bacillus alvei*).

AN INVESTIGATION INTO ITS NATURE.

BY HENRY W. BRICE.

(*Continued from page* 158.)

Immunity from Disease.—One of the most important facts in connection with the subject of foul brood is the immunity from infection of more or less stocks of bees in an apiary, even in centres where the disease is widely prevalent. Every living thing however—as is well known—if its health is properly balanced is naturally immune against all pathological organisms. Natural selection for heredity of bees exposed to risk of infection will not wholly account for the difference which arises from the simple fact that, so long as the balance of resisting power is on the right side, disease is kept at bay, but let the balance turn the other way and immuity ceases. Thus, chilled brood is a dangerously susceptible media, and if the source—it may be—of mischief be not removed, it readily becomes an affected base for one of the many risks which constantly arise in bee-keeping.

That a certain amount of natural immunity exists no one can doubt, but it cannot possibly be absolute in my opinion. That the juices and fluids of perfectly healthy beings are antagonistic to disease is well known, as is the fact that bacilli injected into healthy animals have rapidly disappeared in many cases, but this has not always been so. Besides, it has also been proved that by persistent introduction of disease into healthy juices of living things, such juices or fluids eventually lose their germicidal properties, and even become a suitable culture medium. On the other hand there is the question of what may be termed "acquired immunity," by means of operations such as vaccination and inoculation; but this is, of course, out of the question with bees, as is also feeding them with attenuated cultures. We are therefore obliged to fall back upon the only method remaining to us, viz., the introduction of a germicidal agent into bee-food of sufficient strength to fulfil its purpose without injury to bees or brood. But supposing, for the sake of argument, that a bee can be attacked with *B. alvei* and recover therefrom through the remedial measures adopted, that bee would in all probability be immuned against the particular disease referred to; yet the fact remains that in a few weeks all the immuned bees in a hive will have died a natural death, and the whole process would need going over again. We are thus confronted with a state of things which destroys the whole theory of acquired immunity, and it clearly points out one important fact—that the feeding of germicidal agents, to be effective, must be constant and continual for a considerable period. There is another peculiar phase of this question. I have known stocks affected with disease which, in the course of a few months (especially when a good honey season supervenes), have become, to all appearances, quite cured, without any outside assistance. This points strongly to acquired immunity being possible. I cannot, however, concede that bees or larvæ of affected stocks where the intestinal canal is eaten into by the disease can ever be cured, because I hold that nothing in this world will restore a membrane that has been eaten away or destroyed by disease. On the other hand, it must be admitted that if the germs within can be destroyed, and all growth inhibited by the agency of a drug administered in its food, the larvæ will, in all probability, produce healthy bees in succession to those affected. Thus, what might be termed a passive condition may be brought about, which would in the end lead to a natural state of immunity.

Remedies and Treatment of Diseased Bees and Brood.—This portion of my theme is of the highest importance to the bee-keeping community, and I regret my inability to add much to what is already known on the subject. I have, however, carried out exhaustive experiments for the purpose of testing the qualities of many of the best known substances used or, at times, suggested as remedies for *B. alvei*, so that I may explain the nature of my experiments, and give results so far as laboratory work has enabled me to form definite conclusions on the subject.

First, then, the materials available may be divided into three classes.: (1) germicides, *i.e.*, substances capable of destroying bacilli and spores; (2) antiseptics, in shape of disinfectants which prevent the development of germs; and (3) deoderants, which in some cases arrest putrefaction and destroy foul smells. I may say that, in my view, when dealing with *B. alvei* deoderants may be struck out as practically useless, seeing that to cover up a smell with a counter irritant (pleasant or otherwise), gives no permanently beneficial result. It simply hides for a time that which still exists, and so soon as the deoderant has exhausted its powers the condition of affairs remains much as before. I therefore maintain that, as already said, heat is the most powerful of all remedies.

A temperature of 300 deg. to 350 deg. Fahr. destroys all bacterial life, and also spores, in from two to three hours, while if applied for twenty minutes on three successive days all life or possibility of future germination is completely destroyed, even at a temperature of 220 deg. Fahr. Such authorities as Downes and Blunt have also drawn attention to the destructive effect of light on bacteria, and no doubt this marvellous natural agent plays an important part in the direction indicated, in addition to its health-giving properties. Light and air are unquestionably effective germicides and disinfectants, but I doubt their value so far as destroying spores, save when the same are exposed for a long period to their action. The statement that "thirty-six hours' exposure to light and air will destroy spores" is mere nonsense.

Amongst germicides we have sulphuric acid and nitric acid, or the two combined, but their use is out of the question where bees are concerned. Among many others I consider the most effective for use in dealing with *B. alvei* are sulphate of copper, mercuric bichloride, formalin, naphthol beta, and a new substance called chinosol. Carbolic acid, phenol, &c., and many other germicides having carbolic for a base, but sold under various names are also useful as disinfectants, and even as antiseptics, but I find their action on spores so feeble as to be useless, save when used in solution far and away too strong where live bees and brood are concerned.

(*To be continued.*)

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING APRIL 22, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
April 16....	29·54	39·9	46	39	7	42·3	·03
,, 17....	29·82	43·1	51	27	24	38·4	·04
,, 18....	29·99	44·8	53	31	22	41·5	—
,, 19....	30·10	49·0	58	30	28	43·3	—
,, 20....	30·07	48·5	54	34	20	44·0	·02
,, 21....	29·93	44·3	51	42	9	46·3	—
,, 22....	30·15	43·0	50	31	19	40·0	—
Means	29·94	44·7	51·9	33·4	18·4	42·2	·09*

* Total, ·09 in.

Mean vapour tension, 0·214 in.; mean relative humidity, 73 per cent.; mean temp. of the dew point, 36°·0. The rainfall, viz., ·09 in., =2,036·07 gallons, or 9·09 tons to the acre, or 7·20 oz. to the square foot. For the week ending April 15, the mean temp., viz., 43°·2, was −2°·5, and the rainfall, viz., ·83 in., +·43 in. The mean temp., April 2-15, viz., 46°·1, is +1°·0, and the rainfall, viz, 1·28 in., +·46 in. The mean temp., January 1 to April 15, viz., 41°·2, is +1°·3, and the rainfall, viz., 6·23 in., +·30 in.

FRED. COVENTRY.

Queries and Replies.

[2192.] *Keeping Bees in Manufacturing Districts.*—Can you kindly tell me through your valuable journal: 1. About what weight is a 4¼ in. × 4¼ in. × 1¾ in. section when properly filled, metal separators being used in section rack? (2) Do sections of this size suit the market as well as the ordinary 4¼ in. × 4¼ in. × 2 in. section? 3. What is the best kind of quilt to use when racks of sections are being worked on hives? 4. Does the smoke from the chimneys of a thickly populated manufacturing district have any effect on the bee pasturage or the colour of honey gathered in such district? I kept one stock last season about a mile from the outskirts of this city, but in a district where there are a good many smoky factories, and got forty well-finished 1-lb. sections from it; this being as good a return as I heard of in this district last season, but the honey was very dark in colour. I expect it was partly honey-dew, of which we heard so much last year. There are a good many trees quite near at hand, but if it was owing only to smoke, I would remove my stocks (I have now three) further out to the country.—JOHN HILL, *Glasgow.*

REPLY.—1. If well filled, a section of that size will weigh about 12 oz. 2. No, the 4¼ in. by 4¼ in. is most saleable. 3. Our practice is to cover sections with a clean newspaper, over which usual quilts are placed. 4. Undoubtedly a smoky district will yield honey more or less discoloured by the carbon (soot) flying about, but no appreciable damage to flavour will follow, unless it is a very smoky place indeed.

[2193.] *Distance Bees Fly in Search of Food—Artificial Swarming.*—Will you please tell me in B.B.J.:—1. What you think is the maximum flight bees take in quest of food? In asking this question, I have in my mind a neighbouring village where there are cherry orchards. 2. I have a dozen cakes of candy still unused. Should you turn this into syrup, or continue to give the bees it in its present form? The weather being bad, we have no heather, but plenty of plum and apple trees in the village. 3. Which you think to be preferable in my case in artificial swarming—a spring swarming, or a swarming in August, when our bee forage is over? 4. I suppose, if there are drones in adjacent hives, it is all one wants in artificial swarming in the way of drones? 5. Is the "doubling" process using hives with standard frames above the body-box (for extracting honey), as opposed to section-racks and shallow-frames? The weather here has been very unsatisfactory for bees—cold north and north-westerly winds. I began bee-keeping last year, and have all my bees alive at the present time, but have not

opened the hives on account of the unpropitious weather; but they were well fed last autumn, and have had candy since. I read, with pleasure and profit, the B.B. JOURNAL.—"BISHOP-BURTON," *April* 8.

REPLY.—1. About two miles. 2. Make the candy into syrup. 3. Autumn swarming is best for early districts. 4. Yes. 5. "Doubling" involves removal of brood from a second hive to strengthen the stock doubled. Hence the frames will obviously be all of standard size, unless shallow-frames are used for brood.

[2194.] *"Clipping" Queens to Prevent Loss of Swarms.*—My three hives are situated in a very awkward place for swarming, being on a lead flat on the top of the house. If left to swarm naturally, the chances are that I shall lose the bees, and I therefore thought that if the queen's wings were clipped it would stop the swarm from going away; and this leads me to ask if you will kindly tell me how it is done. I have purchased a swarm-catcher for one hive, but as it is a rather expensive appliance, I thought that I could save the swarm by adopting the above-named method, but I do not know whether you clip one wing or both. I would also ask, must the queen be caught, or can it be done while she is on the frame of comb? If caught, is there any possibility of her stinging one's hand while the "clipping" is being done? Last year I took eighteen 1-lb. sections from a swarm of Italians that I bought in May; I have plenty of white clover and limes quite close to me, besides a fair amount of fruit blossom, and as I am very fond of bees and have no other place to keep them but on the house-top, I should be very grateful for some information. I take in the BEE JOURNAL and *Record*, and have also your "Guide Book," but cannot get any information from either on this point.—J. S., *Dorking, April* 23.

REPLY.—The practice of "clipping" queens, though not much favoured in this country, is largely practised in America, where the conditions under which bee-keeping is carried on are different to ours. As to the operation itself, an experienced hand can remove a wing with little or no risk of damaging the queen beyond the actual mutilation, but it is too delicate a job for a beginner, seeing how easily a queen may be irreparably injured in nervous or careless handling. The usual course is to remove one wing only with a sharp pointed pair of embroidery scissors, removing the wide portion of the wing furthest from the thorax. An ingenious little appliance for clipping queen's wings—while caged—without touching the insect by hand at all, was shown at the last B.B.K.A. conversazione (see B.J. of March 30, page 121). Possibly Mr. W. P. Meadows may already have made some of these cages from the sample given him at the time, as stated in the report. Write and enquire.

Bee Shows to Come.

June 5 to 8 at Windsor.—Bee and Honey Show in connection with the Royal Counties Agricultural Society. Several classes for past season's honey. Schedules from A. D. Woodley, Hon. Sec. Berks B.K.A., 17, Market-place, Reading. **Entries close May 13.**

June 9 and 10 at Epping.—Show of Bees, Honey, and Appliances in connection with the Essex Agricultural Society. Schedules from Mr. G. F. Offlahertie, Monghyr Cottage, Loughton, Essex. **Entries close May 17.**

June 19 to 23 at Maidstone.—"Royal" Agricultural Society's Show. Bee and Honey Section under management of the B.B.K.A. Schedules from E. H. Young, Sec. B.B.K.A., 12, Hanover-square, London, W. **Entries close May 1.**

September 6 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 30.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

W. COOPER (Ryde).—*Using Combs on which Bees have Died.*—1. If, as appears to be the case, the bees died from starvation only, and not from disease, the clean combs may with safety be used again this year. 2. Izal is entirely useless for quieting bees, and is unsuitable for medicating bee food.

R. L. S. (Formby).—*The B.B.J. and Newsagents.*—The B.B.J. can be had on Thursday regularly by ordering in advance at Messrs. W. H. Smith & Sons' bookstall at your nearest station. The firm mentioned take a large number of copies weekly for meeting this demand. It is the agent's fault entirely if you don't get it as stated.

F. M. (Shepherd's Bush).—*The Wells Hive and System.*—The only pamphlet on this system is the one published by Mr. Wells himself, and may be had from him for 6½d. post free. Mr. Wells' address is Eccles, Aylesford, Kent.

JOHN HILL (Glasgow).—*Honey Samples.*—The honey received is very fair in quality in view of its being gathered in a smoky district on the outskirts of a populous city like Glasgow. We think the smoke has contributed to its dark colour rather than honey dew, but another season will probably decide this point.

M. W. B. O. (Dover).—*Honey Sample.*—The honey received is of excellent quality, good in colour, flavour, and consistency. As to its source, we should say it is a mixture of white clover, sainfoin, and raspberry.

C. S. (Cardiff).—*Fermenting Honey.*—Honey received is of good quality, but either from not being fully ripe when extracted, or from bad storage afterwards, fermentation set up, and the honey is becoming sour. If melted by immersing the jars (after removal of caps) in water, and gradually heating to

about 180 deg. Fah. for an hour, it will be greatly improved, and not in any way harmful as food.

W. BRIDGE (Lancs.).—*Old Honey for Use as Bee Food.*—1. It will only be necessary to thin the honey down by adding about one-third of hot water to two-thirds of honey, and immerse the vessel containing the food in hot water till thoroughly melted. 2. It may be used at once.

E. PARSONS (Tunbridge Wells).—*Sulphur Fumes and Foul Brood.*—Fumigation with burning sulphur has no effect whatever on the spores of foul brood. 2. Hive lifts that overlap lower chambers are in common use.

"TORFRIDA" (Richmond).—*Suitable Locations for Bee-Keeping.*—Our correspondent (a lady) is hoping soon "to start bee-keeping for profit," and, with this in view, asks "whether such localities as the Isle of Wight, South Hampshire, or South Sussex are suitable places for a bee-farm?" If readers residing in the localities named, or with experience of their suitability for the purpose named would kindly send a line or two of reply for publication, we will be much obliged.

H. C. H. (Longparish).—*Bees Refusing Foundation.*—We cannot understand bees not working on foundation as sample if other conditions were favourable to section-work in the hive. The wax seems good, and though some bee-keepers dislike the "Dunham," or flat-bottomed-cell foundation, others think it answers well.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

WANTED by the LINCOLNSHIRE B. K. A. a Certificated EXPERT, for a 5 or 6-weeks' tour; bicycle; apply, with references, to R. GODSON, Hon. Sec. Tothill, Alford.

QUEEN FOR SALE. Reared 1898. Address, GAMBRILL, Tailor, Bagshot-road, Ascot, Berks. 129

FOR SALE, FOUR HIVES of BEES, price 15s. H. WILSON, North-terrace, Seaham Harbour, Durham. 125

STOCKS, SWARMS, NUCLEI, QUEENS after May 15th. Seventeen years' "Bazaar" references. HARRIS, Wavendon, Bletchley, Bucks. 133

FINEST ENGLISH HONEY, ½ cwts., liquid or candied, 7d. lb. Tins free. Sample 2d. Deposit. DUTTON, Terling, Essex. 131

ABOUT 100 lb. pure WELSH HONEY FOR SALE. Sample 3d. JOHN EVANS, Caepwllhaelog, Abersoch, Pwllheli, North Wales. 123

PURE BEESWAX, about 15 lb. good colour, and 6 lb. darker. What offer? T. JOYCE, Farnborough, Hants. 119

A GOOD 1898 QUEEN FOR SALE, 3s. Spring sown ONIONS, Sutton's A 1, for transplanting, 4d. 100, post extra. W. LOVEDAY, Hatfield Heath, Harlow.

SEVERAL Strong STOCKS of BEES FOR SALE on standard frames, fifteen shillings each, hives extra. KEYWORTH, Woodcroft, Trowbridge. 132

FOR SALE, a very Strong STOCK of BEES. Eight standard frames without hive, 14s. NASBEY, 7, Merton-street, Banbury. 128

SEVERAL STOCKS (Frame and Straw Hives) FOR SALE, cheap. Particulars of C. DRAKE, Sutton, Ely. 126

Prepaid Advertisements (*Continued*).

"CRYPTO" PNEUMATIC BICYCLE, £2 or Exchange Bees, Hives, or Appliances. RAMSELL, Gardens, Sandbach. 124

FOR SALE, EIGHT STOCKS BEES in Frame Hives. Healthy. 18s. each. H. WEDDELL, Alne, Easingwold. 121

FOR SALE, 8 doz. SECTIONS. Good condition. 3 cwt. run. Dark. Good flavour. 3 cwt. good colour and flavour. Deposit system. What offers? AMBROSE, Chilton, Thame. 120

FEW Strong Healthy Stocks of BEES on six or seven frames in makeshift hives with Italian home-raised or English Queens of 1898, 20s. to 25s. each. W. & A. GEORGE, Interfield Bee Farm, near Malvern. 117

WILL SELL or EXCHANGE for bee appliances. Part set B.S.A. Bicycle fittings. I have no time to fit them. Listed 36s. Brand new. Offers. JAMES CLAY, Albert-road, Wellington, Salop. 130

FOR SALE, '98 QUEENS, 5s. Several splendid carpenter-made standard hives, bargains. Little Wonder Extractor with gearing. HOWES, Melton House, Knowle, Bristol. 118

FOR SALE.—FOUR very Strong and Healthy STOCKS of BEES, two in capital 10-frame hives, two in skeps. Extractor, smoker, escape, lifts, section and shallow frame racks. £5 5s. the lot. J. H. D. BEALES, Kintbury, Hungerford. 116

PRIME NATURAL SWARMS of English BEES from my selected strain, 12s. 6d. and 15s. each, packing box, and put on rail free, through booking to all parts. Telegrams, "Woodley, Beedon, Chieveley." W. WOODLEY, Beedon, Newbury.

BEE-KEEPER offers small Country COTTAGE and large GARDEN rent free to respectable COTTAGER who understands bees and will act as caretaker both summer and winter. Same is situate in remote part of Essex, seven miles from station. Apply, COTTAGE, *B.B.J.* No. 17, King William-street, Strand. 127

SKEPS of BEES, 13s. 6d. each. Foul brood positively unknown in district. Packed and put on rail. G. KNOWLES, Newnham, Ely, Cambs. Z 89

HONEYCOMB DESIGNS. Special Prices if ordered before July 1st. Sketches, 1s. each, returned from first order. CHARLES COX, Brampton, near Northampton.

FOR SALE, BEE-HOUSE, for four hives; EXTRACTOR, nearly new, for four frames (Blow's); and TEN BAR-FRAME HIVES, in good condition. ST. JOHN, Emscote, Warwick. Z 38

GOOD COUNTRY BUSINESS FOR SALE with Machinery. Jobbing work, undertakers, bee-hive and poultry appliance maker. Good chance for a pushing man. Apply by letter to "H," Office of *Bee Journal*, 17, King William-street.

SPRING FEEDERS. Slow and steady supply of syrup guaranteed by new principle. Indispensable for raising large Stocks. Directions enclosed. Post free, 1s. 6d. each. WILSON, Auburnville, Holywood, co. Down. 109

WE LEAD, OTHERS FOLLOW.—TRANSPARENT CELLULOID QUILTS, 17 in. by 15 in. or 17 in. by 17 in. Reduced price 1s. 4d. each (post free 1s. 7d.) CELLULOID QUEEN EXCLUDERS 17 by 15 or 17 by 17. Reduced price 1s. 6d. each (post free 1s. 9d.) R. H. COLTMAN, 49, Station-street, Burton-on-Trent.

Cat A Log

W. P. MEADOWS,
SYSTON, LEICESTER.
Royal Show, Birmingham.
6 Entries, 5 First and 2 Second Prizes.
NEW CAT-A-LOG,
with Prize Exhibits, Post Free.

TO LANCASHIRE & CHESHIRE BEE-KEEPERS
W. CORKILL,
16, Diana Street, Stanley Park, Liverpool.
BEE HIVES AND APPLIANCES.
Best Quality at lowest possible prices.
A Trial solicited.

Editorial, Notices, &c.

THE EARLY SHOWS.

Entries for the "Royal" at Maidstone having now closed (except at an increased entry fee), we invite attention to the letter of the Hon. Secs. of the Berks B.K.A. on this page, by which it will be seen that, although the show of the Royal Counties Agricultural Society precedes that at Maidstone by a fortnight, the date of closing entries for the earlier show extends till May 13 (*vide* advertisement on front page). In view, therefore, of the present fine weather, and the fact that good classes are arranged for honey of previous year's gathering, we trust that readers will render help wherever possible in making the bee department a success. The patronage of her Majesty the Queen and the almost certain presence of members of the Royal family to inspect the bee exhibits will ensure a large attendance of visitors, and *our* display should do credit to bee-keeping.

*** *In consequence of pressure on our advertising space this week we print four extra pages.*

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to "The EDITORS of the 'British Bee Journal,' 17, *King William-street, Strand, London, W.C.*" *All business communications relating to Advertisements, &c., must be addressed to* "THE MANAGER, 'British Bee Journal' *Office*, 17, *King William-street, Strand, London, W.C.*"

*** *In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

"ROYAL COUNTIES" AGRICULTURAL SOCIETY.

SHOW AT READING.

[3660.] Your note in "Useful Hints" of last week reminds me that we, too, have a show upon our hands, which we are very desirous of making a success, viz., the Royal Counties Agricultural Show at Windsor, the entries for which must *positively close* on Saturday, the 13th inst., and we hope that all our friends will come forward and help us, by making entries before that date. We have been met in the most liberal spirit by the Society, and also by the Windsor local Committee, which enables us to issue a comprehensive schedule, copies of which we shall be pleased to send on application. To manufacturers this is a capital opportunity, as, coming in the early part of the season, the sales are always good, and we trust to have a good entry. Our Royal President is taking considerable interest in the bee-department, and we have reason to hope that it will be honoured with not only private visits, but also officially on one or more days of the show.

The Berkshire County Council, too, have again shown their confidence in our work, by authorising us—in lieu of the usual bee-van tour—to make a detailed expert tour, with instructions that, as far as possible, every bee-keeper in the county shall receive a visit from a properly qualified expert. We are also to collect statistics showing the progress made as the result of our work during the last six years. The information thus gathered should prove interesting, and we have every reason to hope that it will be of a satisfactory nature.

We hope to have the pleasure of meeting many of our bee-keeping friends from all parts of the country at the Royal Borough on June 5 to 8.—A. D. WOODLEY and E. E. EGGINTON, Hon. Secretaries, 17, *Market-place, Reading.*

WORKING FOR HEATHER HONEY.

IS "FEEDING" FAIR?

[3661.] There was some discussion (apparently without result, no conclusion being arrived at) in your pages a few months ago on the subject of working for heather honey. I was not directly interested in the discussion, but a principle was involved affecting all bee-keepers in the United Kingdom. Supposing my bees to have their combs only half filled with brood when the season opens here, would an effort on my part to compel the bees to carry their honey into the supers by filling the brood-chamber with syrup, be an honest effort to make the most of what the season had to offer? I cannot think it would; nor do I consider this an honest way of securing surplus—I cannot say honey—because, well, perhaps my imagination is strong; but if the queen is young and prolific, she will want at least a little more room to carry on her maternal duties when she is stimulated by the income from the heather, and the bees will give it her. I frequently use all the brood-combs of one good stock to make up others when the season opens, so as to have the hives as nearly as is possible filled with brood, and if I had the pleasure of working for heather honey, I should work upon the same lines. When it has been evident that only a short honey-flow could be expected, I have united two stocks at the commencement of the flow, with very satisfactory results. We all know the adage: "Give a dog a bad name and you may as well hang him." And let it once get abroad through the Press that heather honey is produced by feeding the bees with sugar-syrup, and, well, the producers may escape the gallows, but it will take an average lifetime to outlive this "bad name." I am prompted to

whip up those more directly concerned in this matter through a gentleman, recently home from South Africa, having called upon me; one of the subjects of our conversation having been the position of British honey in foreign markets. I mentioned that I knew that one or two producers of honey in this country send their produce, or some of it, to South Africa. "Yes," replied my visitor. "I saw some of it in Johannesburg, and what do you think was the price asked for it?" I had to leave my visitor to reply to his own question, and the reply was, "Four shillings a pound!" (I should say that the honey referred to was in 1-lb. sections), and my visitor added, "We made 2s. 6d. a pound of our own produce," *i.e.*, the produce of his own hives kept in South Africa. I think it is quite clear that producers of heather honey and producers of British honey generally have a name to lose, and I think every possible care should be taken to guard that name. I remember that one of her Majesty's Judges said a few years ago that it is not only necessary to do the right thing, but that we appear to others to do the right thing. — WM. LOVEDAY, *Hatfield Heath, Harlow, Essex, May* 1.

GOOD MANAGEMENT.

"LET ALONE," OR "STIMULATING"—WHICH?

[3662.] In the B.B.J. of March 9 (page 99), appears an article by G. M. Doolittle, from your American contemporary *Gleanings*, entitled, "Good Management or Many Colonies—Which?" On this article, which appears to me not quite to exhaust the subject matter, I should like to make a few remarks.

First, can I gather up the chief points briefly? A questioner is advised to double the number of his colonies, or more, to work less at them, and thereby total a better result. G. M. Doolittle replies:—Granted a locality contains 11,000 lb. honey, granted a colony *consumes* 60 lb., granted a "let alone" colony will give 50 lb. surplus, then 100 "let alone" colonies consume 6,000 lb., and give surplus of 5,000 lb, total 11,000; whereas, fifty well-managed colonies consume 3,000 lb., and give as surplus the remaining 8,000 lb., total, 11,000 lb. Thus the "management" plan is 3,000 lb. better than the "let alone," or more than half as good again. Now, I don't profess to settle this question, but rather to *raise* a few questions and to point a few criticisms.

First, then, I ask, Why does each "managed" colony gather 160 lb. surplus to the unmanaged one's 50 lb? Ans.—Because the one has a larger brood-nest, and double the population of the other, and for this reason alone. Here, then, I venture a criticism. Will not the fifty managed hives, with twice the population of bees, consume just as much honey as the 100 "let alone"? And if this is so, those 3,000 lb. to the good on the fifty side at once become nil. I know some will reply, "Yes, but the 100 hives will consume more than the fifty with same population, because it will be harder for them to keep up the heat of their hives." But, considering that the chief desire of bees in summer is to keep *down* the heat of the hive, I don't think this objection goes for much. Next I ask—Suppose the locality to be good for, not 11,000 lb. honey, but, say, 110,000 lb., would that not make any difference to the estimates? Reply.—No, for under both the plans the bees are supposed to work to their utmost capacity. But then I criticise; 160 lb. of surplus represents A1 management. A man that could do that with fifty colonies might manage 500 easily, without disturbing their brood-combs. Give him 100, and he would have time for enough management to make the difference in surplus very slight between those and the fifty. Say 100 lb. each from the 100, compared with 160 lb. each from the fifty.

Thus we must allow the "let alone" man either a great many more colonies or a great deal less labour, *i.e.*, spare time for something else, or a great deal more honey for his work. Are not the balances, then, beginning to weigh down on the other side?

Another consideration. Either the fifty larger colonies will be more likely to swarm than the 100 or they will not. Some say "Yes." Mr. Simmins says "No; because those hives not brought forward so well in spring will be more likely to swarm than the well-managed ones." Well, if "Yes" be the answer, then the fifty-hive man goes over to the other side in spite of himself, and becomes a 100-hive man. But if "No," then the "let alone" man has 100 swarms to sell at the end of the season, after having gathered as much surplus honey as the other. Whereas, if they swarm under both systems, the 100 man is still fifty swarms to the good. For it is quite unfinished to consider the matter solely as a question of honey. In deciding "which pays best," the swarms cannot be left out.

These are my few criticisms. Remember, I do not advocate a return to skeps or an absolute "let alone" plan. The bee-keeper *must* pay attention to securing the best strain of bees and *young queens* or be left far in the rear; but I do think it is an open question whether spring stimulation, flour-candy, uncapping sealed stores, &c., pays the trouble sufficiently. Pack up a strong colony for winter with a young queen and they will look after themselves until the honey flow next year as well as you can do it for them, is what I am inclined to think. As an example, I quote my "bee-diary" concerning two of my hives:—The strongest hive I examined on March 13 had nine seams of bees, three frames with brood in. I uncapped a little honey then, and once later. April 26 record runs:—"Nine seams, five frames brood." Another hive, first inspected April 26:—"Eight seams, six frames brood." These are my two best hives, one stimulated early, the other unexamined—fair instances of two classes, all con-

taining young queens. The stimulated show no advantage over the uninspected. This is an exceptionally unfavourable season, too—rain, rain, rain. Fruit trees only just coming out now. But I must stop short, or the Editors won't thank—"Buzz," *Milbeck, Keswick, May* 1.

SELLING HONEY.

SMALL SIZED JARS.

[3663.] With respect to jars less than ¼ lb. I see a London firm stocks tie-over jars of 1 and 2 oz. size, but Mr. Howard quotes nothing smaller than ¼ lb. size. I know the President of the East Riding Bee-keepers' Association urged the London firm referred to to make 2 oz. globe honey jars, but, I believe, without success. By-the-by, I find that the ¼ and ½ lb. sizes of globe honey jars commonly hold 4½ and 9 oz. respectively, or 18 oz. to the lb., which is greatly to the advantage of the buyer.—Alpha, *Hull.*

BEE PARASITES.

[3664.] It is difficult to say what the "bee parasites" mentioned by Mr. Sheppard (3653, page 164) may have been from the description given.

They may possibly have been the newly-hatched larvæ of the common oil beetle (*Meloë*). These large blue-black, soft-bodied, sluggish creatures, which have of late been so common in every garden, have a very strange life history. Their eggs are laid amongst herbage, and the tiny, newly-hatched larvæ are said to creep into dandelions and other flowers attractive to the wild bees, where they lie in wait for a bee in order to attach themselves to its body. The bee unwittingly carries the *Meloë* larvæ to its nest. When landed safe in the bee's nest they set to work to devour the eggs and pollen deposited there by the bee, and, throwing off their early active state, they become like an ordinary beetle-maggot, and grow rapidly on the sumptuous fare in the midst of which they find themselves. One or two of the newly-hatched larvæ may often be found nesting amongst the hairs on the thorax of some of our common *Andrenæ.* They are very small (about one millimetre long), elongate, hexapod insects, with long caudal setæ, and of a yellowish-brown colour.

I think these *Meloë* larvæ might possibly have been the parasites observed, because they are rather active as noticed by Mr. Sheppard, and (though I have never heard of it before) there is no reason why they should not attach themselves to a honey-bee, mistaking it for some wild bee, and be carried into the hive, when the conditions would in all probability be unfavourable for their growth and development, and they would simply die or be carried back to the flower by the bee to which they had attached themselves.

In comparison with *Braula cœca*, a *Meloë* larva would be about the same length, but much more slender. Several *Braulæ* would find it difficult to hang on to one part of a worker's front legs, while, on the other hand, several *Meloë* larvæ, owing to their very slender form, could lie side by side without showing to the casual observer anything more than the thickening noticed; but when disturbed they would separate and disperse in separate directions precisely in the manner indicated.

I have never heard of a parasite on *Braula cœca.*

If Mr. Sheppard thinks he could recognise the parasite again I will send him the next *Meloë* larva I find.—F. W. L. Sladen, *Ripple Court, Dover, April* 29.

A WAX MITE?

[3665.] A few days ago I received a communication from Mr. G. F. O'Fflahertie, of Loughton, Essex, asking me to identify some very tiny mites he had discovered in examining some rubbish from one of his hives; he also very kindly sent me some of the refuse, which I looked carefully over; unfortunately, however, I could only—after long search—find one live and one dead specimen among the whole.

Complying with Mr. O'Fflahertie's request has given me much pleasure, and though these mites are very difficult to manipulate as one might wish, I have no hesitation in saying that it belong to the "spider-like animals" classified as *Acarina*, and that the species in question is a *Thyroglyphus siro*, the *Acarus domesticus* of Deg., our common cheese-mite. It occurs in houses, &c., between cracks, and is found on dried fruits and meats as well as on old cheese. Dutch cheese nourishes a rather larger species called *Thyroglyphus longior;* but so far as I know this is the only *recorded* case where this mite has been noticed amongst bee-hive dross. It is, of course, nothing unusual, nor is it to be wondered at, when we realise what enormous numbers of the *Acarinæ*, of one sort or another, are spread throughout animals and inanimate nature!

Thyroglyphus siro has eight legs (which in itself shows us it cannot be an insect, as all insects possess six legs, no more and no less) each leg has seven joints, at the extremity of which two claws are recognisable, and a not very easily-discernible pulvillus. The back of the mite has long bristle-like hairs.

Mr. O'Fflahertie asks if it is a wax mite? I can see no absolute reason why it should not be thus termed; though it must necessarily remain a cheese-mite as well; and seeing it lives on more than one kind of stuff of one sort or another, I can see nothing incorrect or unreasonable in it. And I am further inclined to ask, Where are mites not found?—R. H. Hamlyn Harris, F.E S., &c., *Villa Rominger, Tübingen, Wurtemberg, Germany, April* 19, 1899.

(*Correspondence continued on page* 176.)

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Mr. Marr is an old and esteemed subscriber to our journals of many years' standing, but we had not the pleasure of making his personal acquaintance (pictorially only, of course) until now, or indeed of knowing the amount of interest attaching to his bee-experience. We are specially pleased with the "Ready to Start" picture, and the accompanying description, as giving solid information useful to heather-going bee-men.

It is just such accounts of the gradual evolution from skep to frame-hive as Mr. Marr's and Mr. Bartlett's (vide page 145) bee-gardens show that prove how surely is modern bee-keeping supplanting the skep and sulphur-pit, and our gratitude is due to these veteran bee-keepers for showing in their own practice and experience how much the new is above the old in bee-keeping. Readers will join us in wishing long life to both of them :—

"My 'bee-garden' is an old-established one, having occupied the same ground for three generations so I was in a manner born among 'the bees.' They are my hobby, and the pleasure derived from them is to me unbounded. At present, the apiary contains twenty-six hives, part only being shown in the photo, and of course it has gone through the usual evolutions. For instance, it was considered a great step forward when, instead of destroying the bees to obtain the honey 'ekes' were placed below the straw skeps then in use. These were superseded in time by supers above, but the frame-hive was first introduced in the seventies.

"The circular hives shown in picture are our old friend the 'octagonal' made round. They are, however, fitted with movable frames, the four centre ones being of standard size. It thus makes a first rate hive and is well adapted for the moors. Swarm-catchers are used to prevent loss of swarms ; the hives on the left hand of both rows are seen with the catchers fixed to them, when photographed. This being a poor honey district the take per hive is not large, ranging from nil to 20 lb. or 40 lb. to nil according to the season. In a good year, however, I have taken 100 lb. comb-honey from one hive but this is exceptional.

MR. JAMES MARR'S APIARY, DUNTOCHER, N.B.

"About a score of queens are raised every season for such hives as are intended for the heather harvest. My favourite plan of procedure for this is to set out in preparing for the heather with as many bees as will cover two or three frames, and working them up till they have about ten frames filled with brood. This condition is what I call 'full bloom,' and we try to reach it by the time the heather is yielding nectar. This method I find gives good results. The bees, being all young ones, work with a vigour and energy not displayed by older and more populous hives. In the same way a natural swarm, headed with a

young queen gives an equally good return. Old-established stocks, on the contrary, which have wrought well in the forepart of the season at home seldom do much in the supers at the heather, because on arrival there the queen ceases to lay eggs and the bees store the brood combs until they are solid slabs of honey. It can therefore end in nothing but disappointment to go to the trouble of carting a miscellaneous lot of hives to the moors, and, after dumping them down on the heather bloom expecting the bees to do the rest. I have enlarged somewhat on this part of the subject, there seems to be so many inquiries in the bee journals about non-success at the heather.

READY TO START FOR THE MOORS. (*Time*, 9 *p.m.*, *August* 8, 1898.)

This brings us to the photo of the bee-carriage in second photo, taken in August last.

"In the days when straw skeps were in fashion any light spring van was suitable for moving them to the moors, but upon attempting to carry frame-hives in same manner I met with indifferent success, so to surmount the difficulties inherent to a two-wheeled machine the carriage seen in picture was built, and it answers its purpose admirably. Indeed, I think it may be called unique. As will be seen there are five hives in each row of two tiers, which make up ten hives on each side, or a full complement of twenty hives in the two tiers. The space in the middle of carriage between the hives holds the supers, section-racks, covers for hives, and all other requisites. A comfortable seat is also provided in front clear of the hives—a luxury which is duly appreciated during the long all-night journey by the driver and those in charge.

"Arrived among the heather-clad hills, and with every sign indicating a glorious autumn day, all is hurry and bustle to have the hives on their stands and doorways opened before the rays of the hot August sun penetrate the glen; or—to give a less favourable view, which sometimes greets us—when the pitiless showers, so destructive of bee-life, are driven by the wind up the loch, the mist on the hill tops gradually descending their sides and enveloping everything as in a funeral pall, making our surroundings dark, dank, and dreary enough. But the gloom only serves to make a call on the reserve fund of bee-enthusiasm possessed by every bee-man worthy of the name; you plod on until the task is ended, then, seeking the shelter of a friendly roof, after a substantial breakfast you can renew it (the enthusiasm, not the breakfast) by contemplating in imagination at leisure the load of honey you intend to lift from the hives a month hence.

"Before closing this 'bee-screed' I wish to express my heart-felt sorrow at the death of 'Lordswood.' The glimpses you have given us of his life, his gardening, his love of the flowers, and his bee-keeping are very charming, and make one's regrets all the deeper at his loss."

CORRESPONDENCE.

(*Continued from page* 173.)

WORKING FOR HEATHER HONEY.

[3666.] I notice that your correspondent, "Heather Honey," again writes on page 151 regarding this subject, in which I am much interested. My apiary is situated in a valley midway between different moors four miles or so distant. On one side of the river Till lies the "Freestone" and on the other the "Whinstone." The heather (ling) grown on the sandstone yields honey deficient in quality and quantity compared to that gathered from the whinstone moors. Owing partly to the dryness of 1898 the freestone moors yielded very little, and strong stocks did not store much surplus, whereas similar stocks on the other moors mentioned did exceptionally well.

Re the advantage of removing hives short distances on to heather I cannot say much, having to move mine five miles, right into the centre of a large tract of heather, which is, in my case, certainly advisable. But there must be a great amount of unnecessary "wear and tear" if a bee has to travel one and a half or two miles to its feeding-ground, and the same distance on its return, therefore it must be advantageous "to move the bees right *on* to the heather."

The hives should also be moved in time for the opening of the heather yield, rather earlier than later, before the bees begin to fly home with it.

Some bee-keepers here remove their hives the distance you mention, and I will make inquiries and write again later on.—"CHEVIOT," *Northumberland, April* 28.

PACKING BEE FURNITURE.

A HINT TO APPLIANCE MAKERS.

[3667.] My communication to the B.B J. is of the nature of a growl, which might have been sent to the maker of the goods in question, but my object would scarcely thereby have been attained; I prefer to "read a lecture" to one and all. I have in mind, more especially, a nice honey-ripener purchased from a well-known maker. No doubt when it left his place it was the admiration of all its fellows, bright as silver and not a wrinkle (I mean dent), it was protected for the journey by four battens, but the railway company's servants laughed such insufficient protection to scorn; they must have brought battering rams to bear on it, and when it reached me it was as much knocked about as one of the well-travelled milk cans one sees at London termini. Hives have arrived minus plinths, &c. Well, "claim compensation from the company," says the seller; one might, perhaps, succeed. But is life worth it? And then the goods come on to me by carrier, and I cannot always see them at the station, so the railway company would possibly try to throw the responsibility on *his* shoulders Now there is one very simple cure. Such things as tin goods could be sent out in strong wicker crates or baskets, which should be returnable, something in the style of the parcel post baskets used by the post-office, or, perhaps, as open as a wicker hen-coop. This would afford ample protection. Hives could perhaps scarcely be so protected. I want a new extractor, and I am almost inclined to say I will patronise the maker who will first adopt my suggestion if he will make the fact known by advertisement in the B.B.J. I might exhibit the ripener and extractor at our local flower show, but my present ripener says it would be ashamed to go. I think my suggestion is simple and practical. Makers, please, adopt it, don't be "old fogies," but men of progress.—ALPHA, *Hull.*

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING APRIL 29, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
April 23....	30·21	50·0	56	42	14	48·7	·05
,, 24....	29·80	48 9	50	42	8	45·8	·15
,, 25....	29·44	50·1	56	46	10	50·8	·05
,, 26....	29·50	47·8	54	40	14	46·7	—
,, 27....	29·87	48·0	57	42	15	49·1	·01
,, 28....	29·82	54·0	60	42	18	50·6	—
,, 29....	29·63	54·5	60	48	12	53·7	·09
Means	29·75	50·4	56·1	43 1	13 0	49·3	·35*

* Total, ·35 in.

Mean vapour tension, 0·288 in.; mean relative humidity, 78 per cent.; mean temp. of the dew point, 43°·8. The rainfall, viz., ·35 in., =7,918·05 gallons, or 35·35 tons to the acre, or 1·75 lb. to the square foot. For the week ending April 22, the mean temp., viz., 42°·2, was −4°·9, and the rainfall, viz., ·09 in., −·30 in. The mean temp., April 2-22, viz., 44°·8, is —1°·0, and the rainfall, viz, 1·37 in., +·16 in. The mean temp., January 1 to April 22, viz., 41°·2, is +0°·9, and the rainfall, viz., 6·23 in., = the average.

FRED. COVENTRY.

Duddington, Stamford, May 1.

Echoes from the Hives.

Norwood, London, S.E., April 24.—We have just been right through our stocks, and were much disappointed at the poor progress made during the last three weeks. The weather here is, and has been, very variable, while for a week past most trying to bee-keepers and bees alike, sharp frost, cold rains, and high winds being the rule, and though work is plentiful and workers willing, the weather has kept them very much at bay. We cannot help feeling anxious, for although we had promises of an early spring, everything is fully

three weeks late, and as we in Suburbia here depend on the apple and limes for our harvest, we hope soon to record a change and a better report.—BEE BLOSSOMS.

Sussex, April 29.—The weather is exceedingly trying to the bees. Most of my stocks were unusually strong even ten days since, but some are falling off very much; I believe partly from loss of bees out foraging and partly from the constant checks to brood-raising. The nights have been extremely cold. Yesterday (the 28th) my outdoor thermometer marked 60 deg. maximum for the first time this year. Everything is now backward. I know you will be glad when I tell you that the expert on his spring tour has given me a clean bill of health, and that my fifteen stocks are free from disease. Now I must keep watch that it does not re-appear.—W. N. R.

Beemount, Stoke Prior, Bromsgrove, May 1, 1899.—My bees were well on the wing at noon yesterday, notwithstanding the cool wind blowing. One stock was exceptionally active. About an hour later I saw several drones hovering round and entering this particular hive. These young bloods were doubtless preparing "to do and die." Less than a quarter of a mile from here several orchards are literally white with blossom, but alas! I fear that owing to the unfavourable weather much of its value will be wasted so far as the secretion of nectar is concerned. I heard the cuckoo last Friday week, April 21, for the first time this season. I forgot to state that none of my hives have been opened since last September. I intended examining the stocks at Easter, but weather was too cold. It seems like old times to send an echo from my hive, perhaps the sting I got on my head yesterday has given me a slight attack of *cacoethes scribendi*.—PERCY LEIGH.

Northumberland, April 29.—March with us came in like a lamb and went out like a lion, leaving behind, with a last fierce roar, cold and chilly April showers, which have continued more or less ever since. A couple of fine days, however, on the 17th and 18th, enabled me to get a glance at the condition of my hives, and I find them all satisfactory, except two which were running short of stores. The application of slow-feeders made all comfortable, including myself, seeing that snow has since fallen. In spite of the cold and changeable weather a few blackthorns and plums are yielding a little honey; pollen is also being freely gathered from various sources.—"CHEVIOT."

Queries and Replies.

[2195.] *Swarm Catchers.*—The question of using swarm catchers is a most interesting one now that summer is approaching. I read with great interest the article in the April number of your monthly *Record* from the editor of the *Beekeepers' Review*, but one wants more precise instructions. 1. Must the "catcher" be put on before the swarm begins to issue? If so, few of us will be able to make use of it; but if the queen herself comes out near the lass, and the catcher can be put on when the swarm is seen to be rising, then it will be useful to the man who keeps an eye on his bees, but does not spend his whole forenoon watching them. 2. The American editor also speaks of bees being back and at work twenty minutes after they have issued; but is it not wise to let them settle, even when the catcher is used, before putting them back? 3. In case of one wishing to put the swarm back into the original hive, is there any approved plan of searching for the queen in the combs of the catcher? 4. For years I have put shallow pans of water (during the dry days of spring) near the beehives, and I never saw a bee make use of it. How is this?—T., *Hooton, Cheshire.*

REPLY.—The "catcher" referred to by the Editor quoted is only put in use just as the swarm is seen to be coming out of the hive. Our correspondent has, we fear, not quite grasped the situation at this point. Having "the bees back and at work" means when the supers on the parent hive are returned to the swarm after the latter has been put into a new hive. 3. The "catcher" dealt with in *Gleanings* is simply a bag to hold the swarm of bees as described. Please write again and say what swarm-catcher is meant when combs are spoken of.

[2196.] *Combs Containing Hard Pollen for Swarms.*—I found one of my hives empty and robbed clean out on my spring examination. Some of the combs have a good deal of pollen in them. 1. If I put swarms on these combs will they utilise year-old pollen? It is hard but not mouldy. 2. As an alternative should I cut out the pollen or should I boil down the combs for wax?—G. M. M., *Dorset, April* 30.

REPLY.—1. Hard pollen is unfit for bees' use, and to give combs "containing a good deal of it" entails heavy labour on the bees in the removal. 2. If combs are fairly new it may be worth while to cut down the pollen-cells close to mid-rib of comb, and wash out the remainder by placing under a tap of running water, but, seeing that only the mid-rib is left, minus the waxen side-walls of comb-foundation, the advantage is hardly worth the trouble involved.

[2197.] *Using Combs from Diseased Hives.*—I have a number of frames of fully built-out comb which were bred in for the first time last season. They were taken out of several hives known to be affected with foul brood. Most of the combs had little or no trace of the disease about them, and being perfectly shaped and free from honey, I have some qualms in the

thought of destroying them. I have a notion of placing them into hives going to the moors, and think this might be done with perfect safety if they were exposed for a couple of months or so to air and sunshine. Supposing these combs were placed against a window from inside, would the warmth imparted by the sun's rays hatch out the whole of the spores, and if so, would the resultant bacilli gradually die off from want of nourishment? Before going into this risky experiment will you kindly give your opinion of the risks attached to such a course?—J. H., *Blantyre, N.B.*

Reply.—It would take up too much space to go fully into the scientific issues involved in the proposed experiment, but from the purely practical point of view we advise avoiding the risk if the cells have ever contained diseased larvæ.

FOUL BROOD (*Bacillus alvei*).

AN INVESTIGATION INTO ITS NATURE.

By Henry W. Brice.

(*Continued from page* 168.)

B. alvei immersed in a solution containing 20 per cent. of carbolic acid takes some days before the spores are effectually destroyed. Thirty-five per cent. of the acid is far more effective. With a 20 per cent. solution I tested spores steeped therein for six hours, and after being washed, filtered, and washed again I obtained a growth in two out of three tubes experimented with. Salicylic acid, Lysol, Izal, Sanitas, and several other similar agents I found practically useless as germicides in dealing with *B. alvei*, notwithstanding all that is claimed for them. Naphthaline is a disinfectant and deodorant, and is not, of course, germicidal. Thus, according to my experiments, we are left with the five germicides above mentioned, with carbolic acid and naphthaline as our antiseptics. Bromine and iodine I find unsatisfactory and uncertain as germicides, and, like mercury in this respect, the presence of an alkali destroys their powers. The plan I adopted in arriving at these conclusions has been to select cultures on gelatine in an advanced state of liquifaction, and test them for bacilli and spores, and if both were found in abundance, good; if not, those containing spores only were placed in a temperature of 75 deg. to 80 deg. Fahr. for twelve to eight hours, and the result desired obtained. Where only bacilli were found the tubes were subjected to a temperature of 110 deg. Fahr. for a like period and tested until spores and bacilli were both present. The liquefied culture in ordinary test-tubes measure from 3 to 4 fluid drachms; and those selected were then made up to 6 drachms in bulk with alkaline sterilised beef broth. My purpose in this was to produce as active and as virulent a growth as possible, and thus ensure an abundance of nutritive medium such as would be found in a hive when disease is at its height. The contents of each test-tube was then divided into small phials (holding 5 scruples—or 100 minims) and again tested. The phials—fitted with woollen wads—were then arranged in batches of six, and labelled with the name of the agent or drug with which they were to be tested. I had previously prepared the following solutions:—

1. Naphthol B. ½ oz. to 3 oz. meth. spirit.
2. Carbolic acid (crystal) saturated aqueous solution.
3. Chinosol ½ oz. to 14 oz. water.
4. Bromine saturated solution in water.
5. Sulphate of copper saturated solution in water.
6. Mercuric chl. 1 drachm to 12 oz. water, adding 5 minimums hydrochloric acid.
7. Formalin (a 40 per cent. solution).

To each set of phials containing the cultures under experiment were added a min. of one of each of the above solutions, thus giving to every phial one part of the solution to 100 parts of culture. To another set of phials I added 2 minims of the chemical agent, and in twenty, forty, and sixty minutes respectively examined them. In twenty-four and forty-eight hours respectively they were again examined, the results being tabulated as follows:—

No 1 Test (Bacilli).

One part agent to 100 part culture.

Number of Agent.	Twenty Minutes.	Forty Minutes.	Sixty Minutes.	Twenty-four hours.
1	dead	dead	dead	Could find no live bacilli.
2	alive	alive	some dead	
3	dead	dead	dead	
4	alive	some dead	some still alive	
5	alive	dead	dead	
6	dead	dead	dead	
7	dead	dead	dead	

No. 2 Test (Bacilli).

Two parts agent to 100 parts culture.

Number of Agent.	Twenty Minutes.	Forty Minutes.	Sixty Minutes.	Twenty-four hours.
1	dead	dead	dead	No live bacilli.
2	alive	some alive	some alive	
3	dead	dead	dead	
4	some dead	some alive	a few still alive	
5	dead	dead	dead	
6	dead	dead	dead	
7	dead	dead	dead	

No. 3 Test (Spores).

The above cultures were then passed through filter-paper and washed in several changes of water, three tubes of media being inoculated

from each filtrate, after the same had stood for forty-eight hours. In every case vigorous growth followed in twenty-four hours.

No. 4 Test (Spores).

Tests 1 and 2 were now repeated, and then —without filtering or washing—I added a little solution on fresh media, and after a few minutes poured surplus off again, placing tubes in temperature of 85 deg. No growth was perceptible in twelve hours, but in thirty-six hours growths were strong (absence from home prevented an examination after twenty-four hours) save with mercury, where no growth resulted.

No. 5 Test (Spores).

The whole of the above tests were again repeated, with practically the same results. I then added 4 minims of the respective agents to the phials. Twenty-four hours later test-tubes were inoculated without washing, and strong growths resulted in from two to four days, with the same exception as before noted. The growths came slower, but at length it seemed to me as if the power of the agent was altered; for it failed to have the usual effect of inhibiting germination of the spores, though the conditions were favourable. In one case only, while employing agents as powerful as can be used with safety, *i.e.*, without killing bees and brood, were the spores destroyed. These tests on spores have been very disappointing, as I certainly anticipated that a far more satisfactory anti-germinative action would have been brought about, especially when it is borne in mind that spores could be destroyed by most of the agents mentioned at low attenuations. Such solutions, however, are useless on spores, though perfectly inimical to the bacilli.

Carbolic solution (mercury cannot be bought, and would be unsafe for use in any hands but those of a chemist), as before mentioned, comes out the most unsatisfactory in the tests made. My list only includes seven agents, although some eight others were subjected to investigation, but all proved far below those mentioned in efficiency. Among those rejected were lysol, izal, creosol (these being classed as one with carbolic acid), salicylic acid, methol, and sanitas. For all practical purposes as germicides I found these useless, the only one having even a slight germicidal action in very dilute solutions being salicylic acid.

Final Considerations.—The results of my past work may be enumerated as follows:—

1. Post mortem examinations show clearly that bees and queens are affected with foul brood, and while this is so no cure can be effectual that confines its attention to *brood* alone. 2. The present methods of dealing with affected hives and appliances are decidedly faulty, and in a great measure useless. 3. That while comparatively easy to destroy the bacilli, it is next to impossible (in dealing with live bees and brood) to destroy the spores of *B. alvei*, without injuring the bees, other than by the only safe method of causing them to germinate. 4. *B. alvei* in the rod form is capable of being effectually destroyed if the process is properly carried out. 5. Chemical agents and drugs to be effective must be persistently applied, and the treatment constant, for at least three generations of the worker bees and brood raised during this period. 6. Seeing that queens are in nearly every case affected, no treatment can be satisfactory complete until stocks are requeened from a perfectly healthy hive. 7. The only perfectly safe method I know of for treating hives in which bees suffering from foul brood have been kept is to paint these inside and out with two coats of good oil paint, rubbing the same into every crevice and corner, so as to stick down (as bees do with propolis) all spores beyond the possibility of their being ever again freed and finding a suitable medium for growth. It must be remembered that bacilli or germs of any kind are incapable of spreading beyond the frame in which they are isolated, whilst in a fluid state, unless carried to fresh pastures after contact with something else. Thus I contend that a spore stuck up against a hive wall in a sort of enamelled case is practically sealed up and impossible of removal under any ordinary circumstances. 8. Boiling is almost useless as at present carried out. In fact, I found it necessary to permit some time to elapse between successive boilings, to allow the spores to germinate between each operation. For this purpose a medium must be present of some kind as without this even successive boiling of hives is mainly unsatisfactory. 9. In ordinary hands it is futile attempting to cure any but mild cases of the disease. It thus becomes both better and cheaper to destroy by burning. This may seem hard lines to some, but I feel convinced that in bad cases it is the only method worth consideration.

No doubt disinfectants are most useful in modifying the virulence of the disease under certain conditions, but the conclusion I am forced to is that this modifying power takes place so long as the energy of the agent exists, and on its exhaustion matters are not improved; they have been simply held in abeyance, unless a state of immunity supervenes. To summarise the treatment, my advice, though containing little that is new, is: (a) get bees off combs and destroy the latter at once by fire; (b) keep bees confined for twenty-four hours (this will kill many of the badly diseased ones), rehive them in clean hive on starters only; (c) requeen or give hatching queen-cell in forty-eight hours, *i.e.*, before any eggs are hatched out that may have been laid; (d) feed daily with medicated syrup for two months at least; (e) paint old hives and supers used in connection with diseased bees as above mentioned; and (f) consign to the flames without delay all quilts, combs, frames, &c., removed

from diseased stocks, and do not leave infected matter about an apiary within reach of bees.

After having gone thus far, it only remains to put the conclusions arrived at to a practical test with live bees and brood. This I propose to do in the coming summer as opportunities arise, so that when the dull season comes round again, and bees are once more at rest, I can carry my investigations in the laboratory a stage further.

100, *Brigstock-road, Thornton Heath.*

HONEY IN COMB 1,800 YEARS OLD.

The London *Daily Mail* publishes some interesting particulars regarding relics from the ruins of Pompeii now in the public Museum at Napl s.

Among these relics are several loaves of bread taken from the very ovens in which they were being baked on that fatal day in August, 79 A D., on which the destruction of Pompeii took place. We are told that one loaf bears the impress of the baker's name; but the last two pars. of the account are of such special interest to bee-keepers that we print them entire as follows:—

"There are figs, too, and pears, the former rather shrivelled, as one would expect after all these years, the latter certainly no longer 'juicy.' But perhaps the most interesting relic in the room is a honeycomb, every cell of which can be distinctly made out. It is so well preserved that it is hard to realise that the comb is no longer wax nor the honey, honey.

A piece of the comb seems to have been cut out, and one can imagine some young Pompeiian having helped himself to it and sitting down to eat it, when he had to jump up and fly for his life. One cannot help wondering what became of the piece—whether the young fellow took it with him and ate it as he ran, or whether he left it on his plate, intending to return for it when the eruption was over."

Bee Shows to Come.

June 5 to 8 at Windsor.—Bee and Honey Show in connection with the Royal Counties Agricultural Society. Several classes for past season's honey. Schedules from A. D. Woodley, Hon. Sec. Berks B.K.A., 17, Market-place, Reading. **Entries close May 13.**

June 9 and 10 at Epping.—Show of Bees, Honey, and Appliances in connection with the Essex Agricultural Society. Schedules from Mr. G. F. Offlahertie, Monghyr Cottage, Loughton, Essex. **Entries close May 17.**

June 19 to 23 at Maidstone.—"Royal" Agricultural Society's Show. Bee and Honey Section under management of the B.B.K.A.

September 6 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 30.**

Notices to Correspondents & Inquirers.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

APIS MELIFICA (Bishopston, Bristol).—*Wax Samples.*—We regret delay in reply, caused by uncertainty as to which was your sample. The *date* now sent decides the point, so we hasten to say it is—so far as can be judged without analysis—a good beeswax, though too heavily charged with pollen for most purposes. It is also very soft, and has the unmistakable aroma that makes bees take readily to comb foundation made from it.

A. V. DUNN (Mon.).—*Suspected Comb.*—1. We cannot be sure as to freedom from disease or otherwise unless a small piece of comb is sent containing dead larvæ. The sample sent does not help us. 2. Since "bees are quite strong," there is no reason to think of re-queening, or, indeed, of doing anything till the suspicion of foul brood is either removed or confirmed. We will say yes or no by post-card on receipt of another sample of brood-comb.

W. SWAN (Notts).—*Dead Queen Cast Out.*—The bee sent is a virgin queen. It thus becomes evident that the mother-bee of the colony has met with some mishap, and been replaced by a young queen after all chance of mating had gone by.

Free Seeds of Chapman Honey Plant.—A correspondent writes to say he has a quantity of last year's seed of the above-named plant, but, having no time to send it out, offers to forward a supply to this office for free distribution. Any one, therefore, sending a stamped address will have some seed forwarded.

C. S. P. (Aldershot).—*Bees Cast Out.*—The bees (all dead when received) afford no clue to cause of their being cast out of hive. If the stock is strong, as stated, no alarm need be felt.

J. CRAWTER, JUNR. (Herts).—*Dealing with Foul Brood.*—After taking the measures stated we think there is every chance of a successful issue. As for quilts, &c., they had best be destroyed.

M. B. (Bishops Stortford).—*Suspected Comb.*—The main portion of the dead larvæ in unsealed cells of comb is, as you say, in "normal position," but many sealed cells contain unmistakable signs of foul brood.

BISHOP BURTON.—*Boards for Hive-making.*—We think the best course will be to consult the local joiner who is to give lessons in hive-making as to the best width of board to use. With a pattern hive to work from he will know what wood to use.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held in the Council Room, 12, Hanover-square, W., on Friday, May 5, under the Chairmanship of Mr. E. D. Till. Others present included Messrs. H. W. Brice, W. Broughton Carr, W. H. Harris, J. M. Hooker, J. H. New, F. B. White, T. I. Weston, and the Secretary.

The minutes of the previous meeting were read and confirmed.

New members were elected as under:—

R. H. Coltman, 49, Station-street, Burton-on-Trent; Col. A. Fiske, 59, Eaton Rise, Ealing, W.; Miss Pandeleur, Essendon, Hatfield, Herts.

On behalf of the Finance Committee a statement of accounts to May 4, was presented and passed.

The Education Committee reported the election of Mr. Till as Chairman of the Committee for the year 1899-1900, and that they had approved several nominations of Judges and Examiners at County Shows in Cheshire, Nottinghamshire and Staffordshire.

Correspondence was read in respect to a reported sale of bees affected with foul brood, by a person holding the Associations' Expert Certificate. The Secretary was instructed to make further enquiries into the matter and to report to the next meeting. The remainder of the sitting was devoted to the hearing of impromptu lectures by seven candidates for First-class Certificates, the meeting concluding at an unusually late hour.

SURREY BEE-KEEPERS' ASSOCIATION.

ANNUAL MEETING.

The annual meeting of the Surrey B.K A. was held at the Epsom Technical Institute on Saturday, April 29, when there was a large attendance of members, including Messrs. R. C. Blundell, J. W. Lewis, A. H. Miller, W. F. Reid, A. Watkins and T. Welham, Mr. J. King and Mr. W. Welch, Surrey County Council representatives, Mr. H. Macan, vice-president, Mr. F. B. White, the Secretary, and Messrs. E. B. Jay, C.C., B. Braithwaite, J.P., F. H. White, C. T. Overton, J. S. Greenhill, E. A. Stopford, A. Watkin, Gower, &c In the regrettable absence, through illness, of the President, General the Hon. Sir Percy Fielding, K.C.B., Mr. Welch was elected to the chair.

In moving the adoption of the report the Chairman said it was satisfactory to note that the credit balance of £37 in 1898 was now increased to £45. The membership also had steadily increased year by year from 150 at the first annual meeting in 1896, till their members now numbered 415 all told. This was no doubt very satisfactory, but they must not be satisfied until they had all the bee-keepers in Surrey in association with them.

The report and balance-sheet were agreed to.

In proposing a vote of thanks to the Surrey County Council for the grant of £150 made for the purpose of carrying out certain educational work by the Association, Mr. Reid said that as bee-keepers they were under a great debt of gratitude to the County Council, who had not only given them a grant which compared favourably with grants made by other Councils to similar Associations, but had done everything in their power to facilitate the work which the society had carried on so largely by the aid of their grant. With the help of the County Council's grant they had been enabled to acquire a bee-van of their own, and by its means a large number of lectures and demonstrations on bee keeping had been given, and they had also had, what was extremely important, the use of some very excellent rooms for their meetings. The work the society had carried out with the help of the County Council had, so far as they were aware, given general satisfaction, and as an instance of the society's usefulness he might mention that the number of stocks examined in 1896 by their experts was 778. In 1897 the number was increased to 1,477 and last year there were no less than 1,874 examined. This showed there had been an enormous increase in the work of the society, and they knew also, from the admirable information with their secretary was continually collecting, that the number of bee-beepers was increasing very largely indeed, which could only be a matter of congratulation to everybody.

Mr. Watkin seconded, and the proposition was carried.

Mr. J. King, C.C., returned thanks on behalf of the County Council, and said he felt quite sure that there was very little money that was better spent than the sum the County Council voted to the Association, and he was equally sure no one would ever begrudge it. The Society, the felt sure, might rely on the continued support of the County Council so long as its affairs were so well managed, and it continued to carry on so useful a work.

After a vote of thanks to the retiring officers had been heartily passed,

Mr. Macan (Organising Secretary of the Technical Education Committee) next proposed that the following be the Executive Committee for the ensuing year:—Messrs. Archibald Seth-Smith, R. C. Blundell, C. E. Cuthell, E. Daw, J.P., F. S. Fletcher, and G. C. Halahan, the Rev. L. S. Kennedy, Messrs. J. W. Lewis, A. H. Miller, W. F. Reid, W. Sole, E. A. Stopford, H. E. Taylor, G. W. Walker, and A. Watkin, the Rev. H. West, Messrs. T. Welham, and F. B. White. Mr. Macan said he entirely agreed with the remark of a previous speaker that the aid given by the County Council to this Association was certainly one of the most remunerative given

to any body in the county. When he was annually asked to justify the expenditure of money upon various subjects he always put to himself three cardinal questions. The first was: Was the work carried on efficiently by the body receiving the money? He believed the unanimous opinion of everybody who had seen the work of this Association would help him to answer "yes" to that question. The second was: Did the society receive other financial help, funds voluntarily given or subscribed, and if so to what extent? Well, he thought this Association was second to none also in this respect, because he found that the total income from all sources and for all purposes was about £302, of which the subscriptions of the members amounted for no less than £125. His third point was: How much of the money which the Association handled was actually spent on teaching and remunerative work, and how much for administrative purposes? In this respect, too, he thought their society compared favourably with any other society in the county, for he found that of this £302 which was their total income from all sources, the amount for administrative purposes could not total up to more than £65, and the greater part of that was spent on printing, which was absolutely necessary. Hence, he thought they could congratulate the Executive Council and officers not only upon the efficient way the work had been carried out, but upon the equally important fact that the work had been carried out with the greatest economy.

Mr. Gower seconded, and the motion was carried.

Mr. E. B. Jay was elected a vice-president of the Association.

The meeting closed with the usual votes of thanks.

NORTHUMBERLAND AND DURHAM B.K.A.

ANNUAL MEETING.

The annual meeting of the members of the Northumberland and Durham Bee-keepers' Association was held on the 27th ult. in Lockhart's Cafe, St. Nicholas-square. The experiences of last season were discussed, and it was reported that helpful propaganda work had been carried out under the auspices of the association. Acknowledgment was made of the liberality of the Northumberland County Council in contributing to the expenses of the lectures delivered by Mr. George Wells, from which very considerable benefit to local bee-keepers was anticipated. The number of members was stated to be increasing, and now amounts to over a hundred. The committee and officers were re-elected, and it was resolved that meetings of the members should in future be held half-yearly instead of annually. Three excursions, it was intimated, had been arranged for the ensuing season—one to Westerhope, another to Edmundbyers, and the third to Stocksfield.—*Communicated.*

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of April, 1899, was £2,364.—*From a return furnished to the* British Bee Journal *by the Statistical Office, H.M. Customs.*

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[3668] The month of May has been ushered in by cold north-easterly winds, and although we have had bright sunshine for three or four days past, the nights and mornings were frosty and cold, checking vegetation and cutting short the blossom on the fruit trees. One farmer here tells me that the grass is losing stock owing to north-east winds and frosts, while another says that we are to have five to six weeks of these winds; if so, the outlook is not cheering, but wind prophets are not infallible, and in a day or two we may be rejoicing in real bee weather, with bees revelling in the many blossoms which are now opening on every hand. In many districts help for the bees must be continued, especially if the days are dull, cold, or wet, so that stocks may not suffer for want of food.

Extra sheets of foundation may now be given as required to make up the full complement for supering room, and where old combs have been removed, their places should be filled with full or nearly full sheets according to the requirements of the colony, not forgetting that some room is wanted for the rearing of drones. A patch of naturally-built drone-cells will produce a fine race of drones, far larger than if the bees are driven to rear drones in elongated worker-cells.

May is the month for swarms in early districts (towards its close in our neighbourhood), and hives should be got ready for them, and so avoid delay in getting the new colony established. Swarms arriving from a distance should be fed at once on arrival with some syrup or honey; this puts them in trim for work as soon as they are hived.

Packing Bee Furniture.—On reading the suggestion of your correspondent "Alpha" [3667] the thought struck me that, had the honey-ripener been protected with a yard of wire netting placed around the four laths or battens, the indentations in the tin would have been avoided, and this style of packing would not cost more than an extra sixpence. The wire would also be useful to the purchaser

of the "ripener" at some time to stop a gap. I bought an extractor many years ago and it reached me in good condition without any protection. Perhaps railway porters are more rushed for time or more careless than their fathers were, but any style of package that is cheap, and does not need returning, is in my opinion better than expensive packages, which must be returned at a cost of from 6d. to 1s., besides entailing trouble and worry all round.

Bees and Water-troughs.—I cannot understand why the bees referred to in Query 2195, (p. 177) have never visited the pans of water placed near the hives. The water-troughs at my home apiary require about four or five gallons of water per day to keep up the supply. Of course, a part of this is evaporated by the heat, as the shallow pans are placed in a warm sunny corner—but the bees carry off all the remainder. I should suppose that "T.," *Hooton*, has running water-courses near his hives or some other natural source of supply to account for the neglect of the watering places.

Foul Brood.—I am sure the craft is under a debt of gratitude to Mr. H. W. Brice for his interesting series of articles on F.B., and the labour the investigation must have entailed, besides the cost of instruments and appliances necessary for his very exhaustive experiments. I am sure none will grudge him a hearty vote of thanks for his abundant labours on behalf of the craft.—W. Woodley, *Beedon, Newbury*.

"WELLS" HIVES.

[3669.] Several correspondents having lately given their varying experiences of working on this twin-hive system, I should like to say that for the last three years I have been enabled to carry out Mr. Wells' plan with perfect success. I have had the same two stocks at work the whole time, without either going queenless; and I can safely say that, without the splendid results each year afforded me by my one "Wells" hive, the output from my single hives alone (especially as I had disease in them) would have been very poor. I have left the two stocks entirely to their own devices the whole time; neither requeening them, nor even cleaning the floor-boards for fear of conveying infection; and they are both as strong and promising as ever this spring. Even last year they drew out and mostly filled twenty standard frames of full foundation; and the year before last they also nearly filled sixteen shallow combs besides; and they did still better in 1896—partly filling sixteen more shallow combs.

So far, I entirely agree with those who maintain that the bees from each stock work above their own brood-nest without mixing. My glass quilts give me unusual opportunity of being able to pronounce positively on this point. Last summer, being so unfavourable a season, the division between each group of bees was most marked; and I believe it is *always* maintained, each keeping to its own side and stock.

During the three years, neither of the stocks have swarmed. I have worked for extracted honey only, and have given ample room.—I find I can rarely prevent swarming in stocks worked for sections.—W. R. N., *Sussex, May* 6.

SPRAYING FRUIT TREES.

[3670.] I was asked the other day by a County Council lecturer on horticulture if I knew any cases where the spraying of fruit trees with such things as "Paris green" or "London purple" had had any injurious effect upon the bees; of course, the lecturer said, "I mean before the trees are in bloom and after the bloom is set, not while the trees are in bloom." I must confess that I have never, to my knowledge, met with a case where these things have been used, and if any of your readers have had any experience in this matter I wish they would give us the benefit of the same in the B.B.J.; I know that in America this has been a vexed question; and that in some States (and the number is increasing) it is made a criminal act to spray fruit trees when in bloom with these poisonous compounds, but what I wish to know is, Have these things been used in England to the injury of the bees in the neighbourhood? — Peter Scattergood, *Stapleford, Notts, May* 2.

ZINC COVERING FOR HIVE ROOFS.

[3671.] I note that the question of the advisability of using thin zinc as a covering for hive roofs has been raised both in the Bee Journal and *Record*. If your correspondents mean a wood-roof covered with zinc laid close down, and turned in at corners and edges, let me say I adopted that plan, and my experience is that roofs so covered prevent rain entering from the outside, but, owing probably to the continual condensation of moisture, these roofs were always damp inside, although in my case they have the usual ventilating holes fore and aft. To avoid this fault, I last summer cover the roofs of two hives with cuttings of corrugated-iron roofing, simply laying them loose on top and weighting down. In March last both roofs were quite dry.

If we could get thin galvanised iron (say 24-gauge) with small corrugations, I think it would answer well, as it is the want of free circulation of air beneath the zinc that causes dampness, and this is obviated by the use of corrugated iron.—"Cheviot," *Northumberland*.

MAKING HIVE ROOFS WEATHER-TIGHT.

[3672.] Every bee-keeper knows the importance of a watertight roof. I have adopted a very simple plan with some hives bought in

the flat and which I put together. I painted the overlap of each roof-piece with Stockholm tar, also a little on the inside of the roof—it does not matter if some squeezes out on the outside, paint will take over it. I also use the same tar under the floor board instead of paint, it is possibly to some extent antiseptic. —ALPHA, *Hull.*

BEE NOTES

FROM THE BANKS OF THE WHARFE, YORKS.

[3673.] Often I have wondered at the scarcity of notes from Yorks bee-keepers, and have thought, Are they so busy that they have not time to write to our favourite BEE JOURNAL? Or are they ashamed, seeing such favourable reports from southern bee-keepers? But what can be expected with ice a quarter-inch thick on May 4? In some exposed places eight degrees of frost was registered; which is quite enough to make careful bee-men quake for fear, seeing that stocks are so forward and very little outside food to get. The plum-bloom is all gone now. And it will be fully a fortnight before the hawthorn is out. But, taking all things into consideration, it has, with care, been a favourable winter for the bees, though they have consumed a tremendous lot of stores, and I am afraid there will be a good deal of spring dwindling. In one garden I have visited the bee-keeper evidently thought he would stop spring dwindling by outside feeding in pickle-jars. The result was a new kind of "pickle." Bottles half full of drowned and dead bees, while signs of "fighting" was largely in evidence.

I have to-day been overhauling my hives and find some of them chock full of bees and storing a little honey. But they have been having attention for the last month. Some stocks I have supered and in the majority of them I find the candy boxes filled with comb and honey, a sure sign that all is well in the hive. I have not yet heard of any swarms in this neighbourhood. Rather singular, but I have been a bee-keeper for the last ten years and never yet had a swarm from a Standard hive. We do not get giant takes of honey, but can compare favourable with most; last year's average would be about 40 lb. on all stocks in my apiary, but, unfortunately, honey-dew spoiled the lot. All the time we kept thinking we should get a bit fit to look at but were doomed to disappointment. I should like to see a few notes from other Yorks bee-keepers, and no doubt our editors will find room for them.—HAWK-EYE, *Yorks, May* 5.

MR. WELLS' REPORT FOR 1898.

[3674.] As a bee-keeper for twenty-seven years past, and a constant reader of the B.B.J. for a good part of the time, I—like our friend Woodley—cannot see where Mr. Wells gets that big cake of wax from his bees. I have also been more than surprised to notice that none of your readers have commented on Mr. Wells' report for 1898, and I venture, therefore, to make a few observations on it.

Now, suppose we grant that Mr. Wells from the combs containing his 490 lb. of extracted honey will get 7 lb. of "cappings." Granting also that he got 20 lb. of wax from the "goodly number of old combs" melted down—as mentioned on page 144 of B.J. for April 13—one would think that he would have to melt down every comb in his apiary of seven hives before he could get so heavy a cake of wax as the one mentioned, viz., 35½ lb. This being so, I for one would be much obliged if Mr. Wells would help me and many others who have been in the dark so long as to the weight of wax that may be got from a few hives.

Mention is also made in the report under consideration of the poor returns got by other bee-keepers in Mr. Wells' locality last year compared with his own, but I think the failure has resulted from bad management as much as anything, for we all know that bees require to be fed in times of scarcity before you can get good results, and this is where, in my opinion, our friends in Kent have failed.

I also think that Mr. Wells' average of 84 lb. per hive is a poor one, bearing in mind the way he makes up his stocks every season.—ALEX. PATULLO, *Forfar, May* 8.

[Our correspondent has, we fear, overlooked the fact that—as Mr. Wells explains—his own poor return in surplus honey for 1898 was accounted for by the bad weather for most of the time last year, and only gives the far worse returns of his neighbours in order to show the superiority of the Wells system by comparison.—EDS.]

(*Correspondence continued on page* 186.)

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Mr. W. Norman, whose home-apiary is shown on next page, is a good specimen of the artisan bee-keeper; one of those who—wisely, as we think—have taken to bee-keeping as a home hobby. Writing of himself Mr. Norman says:—"I am a working man, by trade a factory engine-driver, and all the hives seen were made by myself after working hours. I first took an interest in bees a few years ago by keeping them in straw skeps, but after picking up a few ideas from reading and hearing a lecture on bees, I began to take the BEE JOURNAL and the *B.K. Record*, and then got Mr. Cowan's 'Guide Book.' From these I soon managed to get sufficient information to work on the modern system of bee-keeping, and I find it a most interesting pastime after my four or five years' experience of it. During the summer of 1897 I increased my stocks to

twelve by driven bees, and I have now seventeen at my home apiary, besides sharing with my father another apiary of thirty-four hives situated two miles away, but I hope to tell you more about them later on.

"I thought you would blot out the children seen in photo of my home apiary, as they have not much to connect them with bee-keeping except at the honey harvest, when 'the boots' need renewing, although I believe that children brought up amongst the bees are not afraid of them, or like some adults run for their lives at the sight of a bee. My wife, on the left of me, is the daughter of an old hand at the craft, who has kept bees in skeps for over forty years; from him I obtained my first swarm five years ago. My better half is a good hand at taking swarms, bottling honey, and wax-rendering; besides being in many ways helpful to me among the bees. I was the first to propose the formation of the West Dorset B.K. Association, established in May, 1896, and still have charge of the 'depot' for appliances for the members, now numbering about forty. I had a good yield of honey in '97, averaging 50 lb. per hive, and was also successful in prize-winning that year, but in 1898 our crop was spoiled by being so dark in colour.

"I work mostly for run honey, only caring for getting about a gross of sections, as there is no demand for a great quantity in this part of the country. It is curious, but I am never troubled with swarming, in fact I have only had four swarms from this apiary for this last four years. My only method of preventing swarms is to give room in time without overdoing it. I also keep plenty of dry, warm quilts to keep the bees comfortable in winter. I am not an advocate of ventilation holes in roofs, and in all my hives every part is movable and all 'lifts' cap over each other, thus leaving no chance for rain or any damp to get inside; and where there is no dampness I do not think that it requires any ventilation. I formerly used unbleached calico for quilts next to frame tops, but have of late found a good substitute for American cloth (which, of course, goes next the top-bars) as follows:—I cut calico in 16 in. squares, give it two good coats of paint and let it dry well, and when ready for use place over frames with the painted side down, as the bees do not seem to dislike paint; indeed, I very often see them gathering moisture from it when I am painting hives. I have never found any dampness about my quilts as a good top-covering of old carpet and clothes remedies all that, and the bees do not nibble holes through the first quilt as they do when calico only is used. I have had these painted quilts in use for the last five years, and they are as good as when first put on. I hope you will be able to pick up a little sense from my letter, and so I conclude by saying that my bees are now doing well and in good condition for the coming season of 1899."

MR. W. J. NORMAN'S HOME-APIARY, BRIDPORT, DORSET.

CORRESPONDENCE.

(*Continued from page* 184.)

BEE PARASITES.

[3675.] I have to thank Mr. Sladen for his most interesting description of the larvæ and life history of the *Meloë* or common oil beetle, and I have little doubt but that he has established the indentity of the insects we found attached to the leg of the worker-bee. I was very sorry that we were not able to preserve them for further examination, but it was owing to our not having anything at hand in which to secure them, as they were so small and lively. I have, however, since obtained a suitable receptacle to hold them, and have also paid another visit to the same hive in the hope of being able to secure another "sample," but without success. The owner of the stock has promised to keep a look out, and to secure further specimens if possible and let me have them. In the meantime, I should be very glad to accept Mr. Sladen's kind offer to send me any *Meloë* larvæ he may find for the purpose of comparison and making identification quite certain.—W. J. SHEPPARD, *Chingford.*

[Several other communications have reached us with reference to the parasite mentioned, but as they are, in the main, only in the nature of suggestions as to the nature of the insect, we think it best to leave it in Mr. Sladen's hands for identification.—EDS.]

WIRING FOUNDATION.

A SIXPENNY LAMP FOR HEATING EMBEDDER.

[3676.] I am a frequent visitor to the shop of our worthy village shoemaker, it is the general resort of the male gossips of the place on a wet day, he holds a general levée of those who cannot work; one day I spied a new lamp he had bought for heating his irons, which I thought would be just the thing for the embedder used in wiring foundation in frames, a problem which had greatly exercised my mind. Hot water soon cools, and holding the implement over a lamp is tiresome. This new shoemakers' lamp consists of a small spirit-lamp with a sort of stage or trough, in which the embedder can be laid, and by using two no time is lost. I find it extremely handy, and it only costs the large sum of sixpence.—ALPHA, *Hull.*

SOLAR EXTRACTING.

[3677.] It may possibly interest some of those who have recently been writing on this subject, to know that already my solar extractor has melted down for me all the wax out of the old combs which I take out of my hives each spring, either because they are defective, or faulty, or contain too many drone cells, or are pollen choked, or have become too old and dirty, or for any other reason, replacing them with other combs, or full foundation. Every particle of wax is extracted, and only the refuse left behind.

This last is always a real trouble. The cleaning of it off and out of the wire gauze tray is no joke, and in fact entirely spoils the pleasure and advantage of the whole device; being both messy and wearisome.

It occurred to me, however, that perhaps if I laid a piece of tiffany (which is absurdly cheap) over the wire tray, and the old comb and fragments of wax on *that*, it would retain all the refuse, and the wax would go clean through both the tiffany and the wire meshes, without any clogging of the latter with *débris.*

I am glad to say that, on trial, this plan has proved a complete success; and I shall be inclined next time to go a step farther, and remove the wire tray altogether, substituting a suspended layer or bag of tiffany or some similar low-priced material for it. It is so cheap, that whenever it becomes choked and useless, it will be far better to burn it, refuse and all, than to incur all the usual labours and vexation of clearing the wire tray.—W. R. N., *Sussex, May* 6.

[We shall be very pleased if readers who have made a trial of the Solar Extractor will forward their experiences of it, for and against. The full directions for making this useful appliance in the apiary which have appeared in our pages from time to time has no doubt enabled many to construct a "solar" at home, and after the excellent results recorded by several who have tried it there can be little fear that others will adopt one or other of the various modifications of the appliance, from which a choice can be made.—EDS.]

KEEPING BEES GOOD NATURED.

THE PARTS PLAYED BY DRESS, SMOKE, AND MANAGEMENT.

Having been requested to state my ideas for managing an apiary in such a manner as to enable bees to be kept in towns and villages without complaint, I may be allowed to say that the field is too wide for an article from a very busy bee-keeper.

The first object, of course, is to allow the bees to be good natured and happy. This is on the presumption that bees are naturally happy. There is, however, a wide, untamed suspicion among bees that people strolling aimlessly about their hives need watching. To do this, perhaps unnecessary police duty, a few bees seem always on the look out for flowing hair or wool hats. Knowing that these two features are unpleasant to them, we, of course, will not wear wool hats; instead, we will wear a hat having a cape of cheese cloth falling over our neck and shoulders in such a manner as will prevent the bees from getting tangled in our back hair. This cape may be open in the face, or it may be covered with fine silk netting—never wire. Such a hat may hang where it will be handy to put on. It does not assume to keep one absolutely safe from cross bees, but it will do much to keep them good natured and out of one's hair.

It is probable that any bee once rendered

malicious will for ever remain so; for this reason, no one should ever go into an apiary without the above precautions; and, further, a reliable smoker. Oh, yes, now you have got in a little smoker ad.! Well, I don't see how I can provide any other plan by which inquisitive bees can be kept from looking at those beautiful blue eyes through the opening in the cape about your hat; and lingering with justifiable curiosity and wonder at your unnecessary presence among their homes.

All winged insects are afraid of smoke; and while no one can expect vicious bees to start at once for home and honey at the smell of smoke, a nice cloud of smoke will at once change their high C note to the middle register; and the acrid odour of infuriated bees will disappear as by magic.

Bee-keepers pride themselves upon not being afraid of bees, or of not caring for bee stings. We pity their vanity; and say they owe a duty to others, if not to themselves. Because a bee-keeper does not care for stings, and is not afraid, does not justify him in aggravating his bees; nor in pursuing a course that will make the Bee-Keepers' Union a necessary adjunct to keeping bees in town.

Every care should be taken to deport one's self in such a way as not to excite suspicion among the bees. Every bee-keeper knows what bees like, and what they do not like; knows if one gets into his hair, that whether the bee stings or not it must die; and that it will never die without calling, by odour and sound, for help and justice; and that very rarely will the bee fail in communicating its troubles, and in securing help. This fact should demonstrate that more care than is here suggested would not be unprofitably bestowed.

In handling bees, now and then a bee will, upon the impulse of the moment, dart out of the hive and sting the hands. Right here allow me to say that a loose pair of old kid gloves, with the ends of the thumb and index finger cut off, will come to your aid. The bee will sting your glove; and, as its sting holds it fast, your smoker handy by will enable you to quietly kill the bee, and smoke the glove so as to get no more stings in the same place. Such gloves are a great comfort in keeping off the sun's heat, as well as the stings of the bees. The stings will sometimes reach through them, but not enough to be serious.

If I have shown that if bees are kind to their keeper, they will be kind to others, my point has been gained.

Enough cannot be said about smoke in the town apiary—or, for that matter, any apiary.

I have struggled for years to make bee-keepers realise the extra value of a *cloud* of smoke in the apiary; and I have the great pleasure of knowing that those struggles are having their effect.

It is a great comfort to put a quart of chips from the wood-shed into a smoker, and know that its smoke will be ready for use in walking through your streets of bees at any time within three hours.

The malicious manner in which bees will sometimes follow one about suggests the idea of trapping them, when convenient to do so. They will frequently follow the bee-keeper into a doorway, and allow him to close it after them, when, of course, they fly to the window. Any bee-keeper will not fail to realise his opportunity to get rid of them—not through a Porter bee escape but the way of all the earth.

To kill them will save the lives of other bees; and do away with one of the objections to keeping bees in town. — T. F. Bingham, in *Beekeepers' Review* (American).

CHAPMAN HONEY PLANT.

ECHINOPS SPHÆROCEPHALUS.

Our correspondent, Mr. Geo. Keeley, whose letter—offering free seeds of the above-named plant—appears on page 167, writes on the 5th inst. as follows:—

Referring to my letter in B.J. of April 27, page 167, could you insert a few lines in your next issue giving the cultural directions recording the Chapman Honey Plant, or else state the particular number of B.B.J. in which these particular directions appear? I ask this favour because I have had letters from various parts of England, Ireland, Scotland, and Wales asking questions too numerous for me to answer, and being only a working man with not much spare time on hand, and no pretension to scholarship, I have sent seed in most cases without writing, but I may just say here the plant grows best if sown where it is to remain, because it roots deeply in light soil, and if the straight, or tup-root, is broken the plant will not grow so strong or so high. This I have proved by moving them. I have still some seed to spare, and will supply any one sending stamped addressed envelope as before."

We are sorry Mr. Keeley has been more freely called upon than he expected, or than is quite fair, when it comes to applicants for seed asking for directions how to grow the plants. On the other hand we were very pleased to receive a couple of days ago a parcel of seed from our esteemed correspondent, whose offer of free seeds appeared on page 180 last week. It was well the parcel was a big one, for the number of "addressed envelopes" we have been filling are quite "a caution," and as the "cultural directions" referred to appeared so long ago as April 11, 1895, and we not being prepared to meet any demand for that particular number we have decided to reprint the article, as under:—

"This plant, which was at one time all the rage amongst American bee-keepers, and has been by them called the Chapman honey plant, owing to it having been introduced by Mr. Chapman for this purpose, is a native of Southern Europe and Western Asia. The

name is derived from *echinos*, hedgehog, and *ops*, appearance, referring to the globular and spiny character of the flower. The English name is Great Globe-thistle. It belongs to the order *Compositæ*, composite flowers. The plant is bushy, with stems from four to six feet, and alternate leaves, green and slightly hairy above, whitish and downy beneath. They are large, pinnatifid (*i.e.*, divided half-way to the midrib in segments in a feathery manner), sinuate (with a curved margin), with unequal segments, and slightly spinose (hard-pointed lobes). The stems are erect, branched, and streaked with

THE CHAPMAN HONEY PLANT.
(Echinops Sphærocephalus.)

longitudinal lines. The flowers are globular, of a very pale blue, and the plant continues in bloom from July to September. The lowest florets expand first, and the others continue to do so in succession, so that each flower is a considerable time before it is fully blown. It is commonly grown as an ornamental garden plant, and at a distance resembles a gigantic and handsome thistle. It grows without care, and almost any waste place will do, although it thrives better in a light calcareous soil. It is visited by the honey-bee as well as by humble bees and wasps. We have grown it as an ornamental plant for some years, and it is easily cultivated in shrubberies, and, where hoeing is frequent, as in well-ordered gardens, can be easily kept within bounds The seed can be sown from April to June in a bed, and then pricked out in October, from 2 ft. to 2 ft. 6 in. apart. When the plants are fully established they can be propagated by division of the roots in the spring. It is a perennial, and is sometimes called Echinanthus."

'Another perennial plant, much handsomer, belonging to the same family, is *Echinops ritro* (Small Globe-thistle), which grows only from two to three feet high, and has smaller heads of flowers of a deep azure blue, with a metallic lustre."

WEATHER REPORT.

WESTBOURNE, SUSSEX.

APRIL, 1899.

Rainfall, 2·95 in.
Heaviest fall, ·62 in., on 24th.
Rain fell on 24 days.
Above aver., 1·42 in.
Maximum Temperature, 57°, on 28th.
Minimum Temperature, 30°, on 12th.
Minimum on Grass, 24°, on 12th.
Frosty Nights, 5.
Sunshine, 152·2 hrs.
Brightest day, 19th, 12 hours.
Sunless Days, 4.
Below average, 39·5 hours.
Mean Maximum, 50·7°.
Mean Minimum 39·2°.
Mean Temperature, 44·9°.
Below average, 2°.
Maximum Barometer, 30·35°, on 23rd.
Minimum Barometer 28·79°, on 13th.

L. B. BIRKETT.

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING MAY 6, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
April 29 ...	30·04	43·3	50	37	13	43·2	—
May 1....	30·11	46·0	52	35	17	43·0	—
,, 2....	29·86	52·0	56	45	11	50·2	·01
,, 3....	30·02	45·0	57	42	15	49·1	—
,, 4....	30·21	45·0	54	30	25	40·8	—
,, 5....	30·39	47·0	57	30	27	43·0	—
,, 6....	30·43	47·0	58	31	27	44·0	—
Means	30·15	46·5	54·9	35·7	19·3	44·7	·01*

* Total, ·01 in.

Mean vapour tension, 0·216 in.; mean relative humidity, 68 per cent.; mean temp. of the dew point, 36°·2. The rainfall, viz., ·01 in., =226·23 gallons, or 1·01 tons to the acre, or ¼ oz. to the square foot. For the week ending April 29, the mean temp., viz., 49°·3, was +1°·0, and the rainfall, viz., ·35 in., −·03 in. The mean temp., April 2-29, viz., 45°·9, is −0°·5, and the rainfall, viz, 1·72 in., +·13 in. The mean temp., January 1 to April 29, viz., 41°·8, is +1°·0, and the rainfall, viz., 6·67 in., −·03 in.

In the B.J. for May 4, the rainfall, January 1 to April 22, should read 6·32 in. (not 6·23 in), = the average.

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, DURING APRIL, 1899.

Barometer.

Highest, 30·21 in., on the 21st.
Lowest, 28·93 in. on the 14th.
Range, 1·28.
Average height, 29·75.

Thermometers.

Highest Max. Shade Temp., 62 deg., on the 1st.
Lowest Max. Shade Temp., 43 deg., on the 14th.
Highest Min. Shade Temp., 48 deg., on the 29th.
Lowest Min. Shade Temp., 27 deg., on the 17th.
Range, 35 deg.
Greatest Daily Range, 28 deg., on the 19th.
Least Daily Range, 3 deg., on the 14th.
Highest Shade Temp. at 9 a.m., 54·5 deg., on the 29th.
Lowest Shade Temp. at 9 a.m., 37 deg., on the 8th.
Highest Mean Daily Temp., 53·7 deg., on the 29th.
Lowest Mean Daily Temp., 38·4 deg., on the 17th.
Mean of Highest Daily Readings, 53·8 deg.
Mean of Lowest Daily Readings, 39·3 deg.
Mean of Daily Range of Temp., 14·5 deg.
Mean Temp. of the Month, 46·6 deg.
Number of Days Frost in Shade, 5.
Mean of Dry Bulb (9 a.m.) Readings, 46·5 deg.
Mean of Wet Bulb Readings, 44·3 deg.
Mean Vapour Tension, 0·243 in.
Mean Relative Humidity, 77 per cent.
Mean Temp. of the Dew Point, 39·7 deg.

Rainfall.

Number of days on which ·01 in. or more fell, 17.
Greatest Fall in 24 Hours, 0·30 in. on the 9th.
Total Fall in the Month, 1·72 in.
Total Fall in the Year, 6.67 in.

The Mean Temp., viz., 46·6 deg., = the average, and the rainfall, viz., 1·72 in., is − ·04 in. The rainfall for the year, viz., 6·67 in., is − ·02 in.

FRED. COVENTRY.

Duddington, Stamford, May 8.

Echoes from the Hives.

Cobham, Kent, May 2.—As a reader of the B.J., which has been a great help to me in bee-keeping, I send a short "Echo" from my hives. To-day (May 2) has been a splendid one for bee work, the fruit-trees being a mass of bloom, and are simply alive with the buzz of the bees. Several of my stocks are well at work in sections, and it seems very likely we shall have a better year than last for honey gathering. Ours is a very forward district owing to the quantity of fruit grown in the neighbourhood, but we get our greatest yield from the lime trees, of which there is a very long avenue of the finest trees I ever saw not far from my stocks. I have already killed seven queen-wasps; I find them in the green-houses while working in them in my capacity of gardener. Last year an old bee-keeping friend and myself destroyed several nests, one close to my apiary. I have started one more in bee-keeping on the frame-hive system by giving him a swarm, and now he has four stocks in all and sections on them. Of course, we have fine chats on bees and their doings.—A. G.

Chichester, May 8.—The weather is not all that can be desired here in the south; strong north-easterly winds being the rule now, almost day and night, causing a decrease of bees in flying. Apple-blossom is now in its glory, as well as the bees in obtaining nectar from same. If all is well and not too large a decrease in number of bees, we may obtain some surplus from the hawthorn bloom later on this month, when I hope the white clover may yield an abundance for all bee-keepers. (Saw first drone bees flying yesterday.) Not having noticed any reply to "Torfrida" (page 170 in B.J. for April 27), I will venture a reply as regards the South Sussex district. From this city to Worthing, south of the downs, is a fair district for bee-keeping, but the chief source is white clover only, while if one choose to go over or nearer the South-downs he may obtain some heather; other minor sources are palm-willow fruit, haw-thorn, limes, and blackberry, these if located rightly.—J. D.

Sussex, May 11.—Since my last "Echo" the same trying weather has continued. The sun is fast acquiring great power, but the wind is still in the east and north-east, violent, and intensely cold. The thermometer in the shade approaches 60 deg. in the day and 32 deg. at night. Brood, however, is now hatching out so fast that the rapid increase exceeds the heavy daily losses, and the hives are fast filling up. Some of mine are simply over-flowing with bees, and yet it is useless as yet to put on supers, and I dare not leave off feeding, as, although pollen is coming in plentifully, honey is evidently not obtained in sufficient quantity for comb building or even storing. Weak stocks are again making way, and if really warm weather should shortly set in, bee prospects here are more favourable than for five years back.—W. R. N.

Queries and Replies.

[2198.] *Giving Frames of Honey in Spring as Bee-food.*—A bee-keeping friend had six frames of honey taken from hives at back end of last year; about a month ago he uncapped and replaced these, two in each hive (he has three hives). A couple of days afterwards he found a large quantity of dead bees outside one of the hives; he did not see them during the day, hence he cannot say whether any fighting took place or not. 1. What might be the probable cause? 2. I also have half-a-dozen frames of honey by me. What is best to do with it?—ELECTRO-HORO, *Spennymoor, May* 6.

REPLY.—1. The most probable cause of the trouble is that the dead bees thrown out belong to another hive. In other words, a case of "robbing"; but it occasionally happens (fortunately not often) that bees, when being fed in that way, start fighting amongst themselves. Several instances of this have been reported in our pages, and the most likely explanation that can be offered as to why these cases of

"a house divided against itself" occur among bees is that the honey given carries with it the odour of another hive, and, in the excitement that follows, members of the same family cannot distinguish friends from foes. 2. If the combs of food are given in the dusk of evening, there is almost no risk, especially if the honey is capped over.

[2199.] *Using "Starters" only for Swarms.*—Among the many questions that are put to you week by week I have never seen this asked, though I should be exceedingly glad of an answer to it. 1. At what seasons and under what circumstances is it safe to use "starters" only of comb foundation, without fear of finding your frame half filled with drone-comb? This seems sometimes not safe, even when alternated with comb, an inch and a quarter from centre to centre. 2. I have seen in your late numbers lists of the garden flowers from which the honey bee gathers honey; I have never seen any such list of the wild flowers. I do not fancy that a list of the more common field flowers would be very long. Could you give one?—DEVONIENSIS, *Chudleigh, May* 4.

REPLY.—1. It may be regarded as "safe" to give starters only to swarms on hiving. As a matter of fact, the full sheet of foundation in frames is a modern idea, and in our early days nothing beyond inch deep starters was ever thought of. 2. A list of all the wild flowers visited by bees would take up more space than we can spare just now. The main sources of surplus honey are, however, confined to the various clovers, field beans, mustard (grown for seed), charlock, and a few others.

Bee Shows to Come.

June 5 to 8 at Windsor.—Bee and Honey Show in connection with the Royal Counties Agricultural Society. Several classes for past season's honey. Schedules from A. D. Woodley, Hon. Sec. Berks B.K.A., 17, Market-place, Reading. **Entries close May 13.**

June 9 and 10 at Epping.—Show of Bees, Honey, and Appliances in connection with the Essex Agricultural Society. Schedules from Mr. G. F. Offlahertie, Monghyr Cottage, Loughton, Essex. **Entries close May 17.**

June 19 to 23 at Maidstone.—"Royal" Agricultural Society's Show. Bee and Honey Section under management of the B.B.K.A.

July 13 and 14 at Louth.—Honey, Hives, and Bee Appliances in connection with the Lincolnshire Agricultural Society. Bee Department under the management of the Lincolnshire B.K.A. Schedules from R. Godson, Hon. Sec. Lincolnshire B.K.A., Tothill, Alford. **Entries close June 13.**

August 7 at Beddington Park, near Croydon.—Surrey B.K.A. Annual Show, in connection with the Beddington, Carshalton, and Wallington Horticultural Society. Increased prizes. Five Open Classes, including single 1-lb. jar and section, with free entry. Schedules from F. B. White, Hon. Sec., Marden House, Redhill. **Entries close July 30.**

September 6 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 30.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

*** *We are again obliged to print four extra pages this week.*

*** Referring to the letter of "Alpha" on "Packing Bee-Furniture" (3667, page 176), Mr. Coltman, Station-road, Burton-on-Trent, writes to say he "will be pleased to supply goods packed as required."

J. L. (Stratford-on-Avon).—*Drone-breeding Queen.*—The entire absence of worker brood with an abundance of drones at this season makes it quite certain that the queen is either an unmated mother or a worn-out queen. Unless there are a good number of worker bees in the hive it is very little use uniting them to the next stock, as they will be chiefly old bees, and such are hardly worth their "keep" at this season.

H. CLARKE (Rye, Sussex).—*Transferring from Skeps to Frame Hives.*—The best time to set on the skep above frames for allowing bees to transfer themselves into a frame hive is when weather becomes settled and warm, and the skep is fairly well filled with bees. The actual time of day on which to operate is of no great importance.

A. DEALTRY (Astley).—*How long do Bees Live after Swarming?*—Seeing that flying bees of all ages issue with the swarm, the length of time the bees constituting swarm will live has no connection with the date of issue.

W. C. N. (Newton Abbot).—*Re-Medicating Bee-food.*—There is no reason for adding a second dose of N. beta solution when warming up syrup-food made last autumn.

H. DAWES (Herts).—*Bees Unable to Fly.*—We cannot account for bees "dropping to ground in hundreds" unable to fly, except by supposing that food is short, or that the sun has tempted young bees outside where they have become chilled by cold wind. If the colony is strong, very likely a few days of the present warm weather will set matters right.

E. MAXWELL.—*Suspected Comb.*—There is no trace of brood in comb sent. The cells contain only freshly-gathered pollen and honey.

F. D. HILLS (Hereford).—*Salicylic Acid.*—1. You are right as to this being obtained from the willow, but whether or no willow pollen contains anything of an antiseptic nature in sufficient quantity to be of appreciable benefit to bees suffering from foul brood, we cannot say. 2. The hon. sec. of the Hants and Isle of Wight B.K.A. is Mr. E. H. Bellairs, Christchurch, Hants.

N. S. E. (Sheffield).—Mr. F. Walker, 64, Gerard-street, Derby, is hon. sec. of the D.B.K.A., and will afford all information as to membership.

Editorial, Notices, &c.

USEFUL HINTS.

WEATHER.—It is an occasional subject of good-humoured remark by our brethren of the craft across the Atlantic that British bee-keepers always begin by talking about the weather. Nor can we—of the "Useful Hints" column at least—deny the soft impeachment, seeing that the very first word of our "text" is invariably "weather." But we attribute this peculiarity not so much to our poverty of either words or subject as to the "Britisher's" insular habit of sticking to the point. This being so, we ask what subject has so much of "point" in it—to the bee-keeper—as that of the weather? What is the good, to him, of metaphorical, wide ocean-like expanses of bee-forage and millions of bees ready to extract therefrom tons of what *we* call "nature's finest sweet" if (to drop metaphor and use inelegant but expressive English) a beastly east wind keeps on blowing all the time? And so, to begin again in our orthodox fashion, let us say the present weather, although by no means bad, has a good deal too much of the "fine but cool" about it for real bee-work. We do occasionally get an hour or two of sunshine—minus the cold wind; and when this occurs what a change comes over the apiary! the bees turn out by thousands in the eager endeavour to make hay while the sun shines. The warm rain of the past few days has imparted a wonderful change in vegetation. Indeed, we are now in full enjoyment of the growing weather so dear to the farmer's heart, and if bee-keepers have chafed because of cold winds that kept bees indoors they must bear in mind that it is only mid-May, while the date of clover-bloom is still a fortnight or more in front of us.

SWARMING AND SURPLUS-STORING.—For the next week or two some amount of judicious care may be profitably employed in providing every forward stock in the apiary with room for comb-building, without overdoing it. Strong colonies will now be increasing so rapidly in population that three or four successive days of bright, warm weather will be almost certain to start the "swarming fever," as it is not inaptly termed; and once begun, it is well-nigh impossible to check it. To prevent this, and set up in its stead what the Editor of *Gleanings* calls the "working fever" should, therefore, be the aim of every reader who looks to surplus-storing as his main object in bee-keeping. There can be no doubt that the prevention of swarming is one of the most important problems that require solution connected with the successful management of bees, and the various devices—some new, some old—which are offered by manufacturers will receive full trial during the next few weeks; but, as we stated in our last "Hints," on p. 162, the main object of them all is to apply the known principle of giving timely room and ventilation. To this may be added securing full advantage of the comb-building impulse which invariably takes possession of bees as soon as food is obtainable in spring, and even prompts them to fill every vacant space with comb. In this way they will even use candy given as food, in filling the box which contained it, with combs for honey-storing; a fact well known to most bee-keepers.

By ministering, then, to this impulse the bees become so occupied with work that what is called "hanging out" never enters their heads, and if the queen finds no lack of empty cells for her egg-laying purposes, the bees will frequently go on comb-building and storing until the first excitement of warmth and sunshine has passed away, and swarming gives place to surplus-honey storing.

SPRAYING FRUIT TREES IN SPRING.—The letter of Mr. Robb on page 192 opens up a very serious question for bee-keepers, and we shall be glad to receive further information from readers who have had experience of the mischief. Meantime we copy from the American Bee Journal a paragraph which appeared in the *National Stockman and Farmer* (an influential paper published in the U.S.A.), which reads thus:—"There is probably no law on the subject in some of the States, and yet there should be. No thoughtful person, even though he has no bees of his own, would be willing to injure those of his neighbours; but some people are not as careful as they should be.

"The time to spray is, first, before the buds expand, and, second, after the bloom has fallen off. Subsequent spray-

ings may be necessary, according to the judgment of the orchardist, but there is need to spray while the trees are in blossom. The bees are among the best friends of the fruit-grower, carrying pollen from one flower to another, and from one tree to another, and any one who raises fruit—of any kind—will find it to his advantage to keep bees, even without taking the honey into account."

(*Remainder of "Hints" next week.*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

SPRAYING FRUIT TREES.

A DAMAGING REPORT.

[3678.] In reply to your correspondent, Mr. P. Scattergood (3670, page 183), as to whether there is any danger to bees when fruit trees are sprayed with "Paris green" or "London purple," to my sorrow I have this season had unmistakable evidence that there is. In this district immense quantities of fruit are grown, such as apples, plums, raspberries, and gooseberries, and it is a usual thing with most of the large growers to regularly spray their trees each spring, especially gooseberries. Although I have watched the bees closely each time, until lately I may say there has been no harm done to stocks. On Wednesday, May 3, after my day's work was done, I looked into most of my eighteen hives and was gratified to find bees looking so well and ready to work as soon as suitable weather came. I did not disturb them much, merely uncapping a few cells here and there to encourage brood-rearing. But on entering my apiary the following evening, May 4, I found the ground literally covered with dead and dying bees. To give your readers some idea, it was like a very bad case of robbing and fighting, only the bees on the ground were not torn or mangled in any way. I knew that on the place where I work, spraying had commenced on a field of gooseberries the same day, Paris green being the principle thing used, in the proportion of 8 oz. to 100 gallons of water, hellebore powder was also used, but in what proportion I cannot ascertain. This spraying continued for three days, May 4, 5, and 6, and on each of these days the mortality among the bees continued; on the following day, Sunday, very few bees died. The field was finished in three days, and comparatively no bees have died since, although they have continued to visit the bushes until the last few days. The bushes were full of bloom all the time, and were swarming with bees. The spraying does not appear to have hurt the fruit at all. Since then, when the weather has permitted, several sprayers have been at work on apples and pears, but no harm has been done. Personally, I do not think there is the slightest danger to the bees, unless the trees are in bloom, and it would also appear to do no harm only when fresh applied, as very few bees died the day after the spraying ceased. [*Vide* p. 191.—Eds.]

It has seriously crippled my stocks for the season, and I shall be obliged to unite them up to at least one half as soon as real bee weather comes.—Edward Robb, *Outwell, Wisbech, May* 15.

RANDOM BEE JOTTINGS.

[3679.] *Clipping Queens' Wings.* — While myself quite satisfied with the editor's reply to "J. S." (2194, page 169), I wish to say that if circumstances compelled me to keep bees on the roof of my house, I would either keep only so many stocks as I could afford to purchase self-hiving appliances for, or so many as the leisure time at my disposal would allow me to thoroughly examine and cut out queen cells at intervals of seven days for about three or four weeks. "Clipped" queens are—to my mind—more likely to get lost among the niches and crannies of a roof than upon mother earth, where it is possible for the bees to find their queen in the potato haulm or the very numerous etceteras of the garden.

Mr. Wells' Annual Report.—Your correspondent, Mr. Alex. Patullo (3674, page 184), expresses surprise that, previous to the appearance of his letter, no comment had been made upon Mr. Wells' annual report. Well, had time allowed, their was only one item in Mr. Wells' report referred to that I would have, and now do offer a word of comment upon, and that is where Mr. Wells says, "As is my usual practice every spring, I joined up my stocks." If bees kept on the two-queen system, and in the garden of England too—*i.e.*, the county of Kent—must be joined up in spring, where does any advantage that may attach to the system come in? The "Wells' system" of wax extracting is, I think, the most perfect on record, especially for old combs. In rendering wax by any one of the old plans I can only get about one and a half ounces of wax from an old comb, or about a pound of wax from all the combs from an ordinary hive, but it is very difficult to get all the wax from old combs. If circumstances allowed I would adopt Mr. Wells' plan of rendering wax, *i.e.*, have a boiler much the shape of a bee-hive, in which the combs are placed and fixed upright and boiled in that position; then, I believe, I should secure a much larger quantity of wax.

Making Hive Roofs Watertight.—I have no doubt that, as "Alpha" says on page 183, tar is to some extent antiseptic, and there can

be no doubt that it is a good waterproofing substance; but tar invariably becomes soft and freely adheres to anything and anybody that may come in contact with it in warm weather, and I think the utility, cheapness, and antiseptic properties of tar as a waterproofing substance for bee-hives, will be quite over-balanced by the trouble it will cause when the fingers come in contact with it. A pot of grease would have to be kept handy to remove it.

Advertising Spare Queens for Sale.—A fortnight ago I had a spare queen on hand, and, being a good one, I decided (rather than kill her) to offer her for sale in the B.B.J. at a price that I thought would repay me for my trouble. The result was, I was overwhelmed with applications for this queen, and in consequence the only person to benefit by the transaction is the Postmaster-General. I am still receiving letters of inquiry for this queen. There are two sides to most matters, and while there is a certain amount of pleasure in spending the afternoon of a fine day in returning postal orders to the senders, may it not be taken as evidence of indifferent management that so many bee-keepers should be wanting a queen bee in April? People too, placed in the most varying circumstances, and spread over the whole country between John O' Groats and Land's End.—W. LOVEDAY, *Hatfield Heath, Harlow, Essex, May* 15.

NOTES FROM A BEE-KEEPER'S DIARY.

[3680.] *Saturday, May* 6.—The past month has been trying for man and bees. Everything at a standstill. Trees chary of shedding the shields which protect their leaf buds. Bees venturing out with caution, days, even when bright, cold, with bitter north-easterly winds, and nights frosty. I should say vegetation is quite three weeks behind time. The last few days there has been plenty of warm sunshine, but, ugh! the cold winds! I have found stocks 6 and 8 in a bad way. No. 6 drone-breeder and 8 queenless; these were composed of nuclei united late in the autumn and having late born queens. The positions of my other hives being more exposed, I have not yet ventured to examine the combs. Sealed stores have vanished like magic, and syrup making has been the order of the day or rather evening. I bought two new stocks of black bees. They are very strong and have each brood on six combs. I was struck with their great gentleness. Paid a visit to a *genuine* lady bee-keeper about eight miles away and looked through three hives, all strong and well. I have heard of numbers of stocks dying about here, mostly of starvation. The expert has just been and reported the district free from foul brood. Several had cakes of candy on but no stores, and the bees were clustered over small patches of brood. I expect that during the cold, they have left the candy to cover brood and been starved during the spell of severe frost. A friend has just called relative to buying a pure Ligurian queen. I discountenanced the idea. I always considered them over-rated. They work for themselves and pillage all the other stocks. Then they come from the land of "Goodness Knows Where," and in those realms they have no British Bee-keepers' Association nor County Associations and experts' visits. Moreover, from what I have heard and seen of Continental bee-keeping, they have much to learn from Great Britain and America. I send you an extract from "The Farmer's Year," by Rider Haggard, now appearing in *Longman's*, perhaps it will interest your readers:—

"A little higher up the hill is field No. 26 just now full of bloom that gives out what I think one of the sweetest of perfumes. A person standing near these beans on such a day becomes aware of a humming noise, which, on examination, he will find to be caused by bees passing from flower to flower. There seem to be several bees to each stalk, and how many tens of thousands of stalks there are in a six-acre field I should not care to calculate. Where do all these bees come from, I wonder? I and a few others have some hives, but they are not largely kept in the village. Yet in that field alone their number must be almost countless."

Sunday, May 7.—A glorious day, wind being severely nor'-east in morning. I could not proceed with examination of stocks. The fruit trees are promising well. The big Jargonelle is now white with bloom, and numbers of town people out for their morning's walk stop to admire. Here is a list of blooms in my garden:—Fruit: Pears, plums, apples, gooseberries, currants, red and black. Shrubs: Ribes, Primus triloba. Flowers: Narcissi (many varieties), primroses, white arabis, Dielytra formosa, periwinkle, wallflowers, cowslip, hyacinth, ground ivy, wood sorrel, auriculas. In the afternoon I manage to get through my remaining stocks. All are healthy and brood raising is being pushed on. The number of newly-deposited eggs shows that they have realised that spring has come to stay this time. Still, bees are not in such numerical evidence as I would like. I do not think there are so many now as in February. I suppose the cold has killed off the old ones quicker than the young ones could be reared to replace them. I am always glad when this spring examination is over, and a clean bill of health is the result.

Tuesday, May 9.—To-day we have had some very heavy showers. The wind is now south-east and a falling glass, so we may look for more rain. Last week we discovered that the "magpie moth" (Abraxas gnossulaniatæ) had stripped several gooseberry trees of their leaves and blossoms. Since then I have devoted an hour each evening to "grub picking," with the result that I have destroyed 1,699 in five

evenings. The eggs are laid in autumn, and the young remain in a larval stage during winter in the "hole" or under decayed bark. In May they commence their ravages, and unless checked make quick havoc of your fruit. I killed the moths by hundreds last autumn, yet their legacy remains. A gardener's life, like that of the policeman, is not a happy one. Green fly—strange that it always comes with east winds—is on my young rose-shoots. Slugs are devouring the seedlings. No wonder amateurs prize their flowers and fruit when it is so dearly gained. —WHITE CLOVER.

"WELLS" HIVES.

[3681.] Referring to the letter on "Wells Hives (3669, p. 183), your correspondent "W. R. N." encourages me to try my hand with a Wells hive. Hitherto the conflicting reports on their doings have prevented my trying the system, but when W. R. N. says, "During the three years neither of the stocks have swarmed. I have worked for extracted honey only, and given ample room." I fancy the whole secret (if any) is contained in that last clause—"and given ample room."

Will "W. R. N." kindly say when giving the "ample room" does he give all the shallow-frames (eight or nine) in the super at one time, or at intervals, and about what time the first super is put in place?

I also observe that in "Bee Notes" (3673, page 184), a correspondent signing himself "Hawk-Eye" says :—"Rather singular, but I have been a bee-keeper for the last ten years and never yet had a swarm from a Standard hive." Will "Hawk-Eye," for the benefit of us beginners, explain his methods of working, by which so desirable (to some of us) an object is accomplished — non-swarming?—W. C. HANNAFORD.

CELLULOID QUILTS.

[3682.] It occurs to me to ask you to warn your readers to be more than usually careful in using these new celluloid quilts and excluders. A spark from the smoker may easily lead to a conflagration that will very effectually eradicate "foul brood" bees, hive and all; celluloid being exceedingly inflammable. Dealers should be very careful also where they store the article. I may mention that we have great trouble in getting it stamped out for excluder, many firms refusing to handle it at all because of the fire risk.—GEORGE ROSE, *Liverpool, May* 3.

AN ARCTIC BEE-HIVE.

[3683.] It may interest your readers to hear of the survival (not of the fittest) of one of my stocks under very adverse circumstances. On removing the roof of this hive one morning early in March, after experiencing some very heavy rains, followed by severe frosts; I found the whole of the quilts absolutely embedded in ice, and had some difficulty in removing them. But after freeing all but the one next the frame-tops, I was surprised to find from the warmth that the bees were still alive. However, after wrapping them up again as warmly as I could, and making the roof waterproof, I left them till the first warm day—which did not arrive till three weeks later. I then made a thorough examination, and found everything going on as prosperously as possible, and no trace of their Arctic experiences. This stock was not particularly strong in the autumn, being a cast which I had saved for the sake of having the young queen in the spring.—A. HODGES, *Hazelwood, King's Langley, May* 4.

NOTES FROM THE WEST.

[3684.] Although real bee weather has been long delayed, stocks are now in fairly good condition, and ready for any burst of warm sunshine which will give a chance at the opening bloom. During the last fortnight some nice apple-honey has been obtained, and the May blossom should go a long way towards filling up all brood-chambers with abundant stores for some time to come. I have not heard of any swarms in this district yet, though this may happen now any day, especially from straw skeps. Last week I was sent for by a farmer a few miles from here, as his bees were "hanging out," and I made an artificial swarm for him, putting it in a frame-hive on the old stand. Two days afterwards both stock and swarm were hard at work.

Bees and Water-troughs.—My bees (like friend Woodley's) always enjoy a revel at these during early spring, and will remove several gallons a week, especially if a pound or so of sugar is mixed in. I add a little izal or naphthol beta to mine, and this I find is a safeguard against any signs of disease which may come along, besides acting as a sort of tonic to the bees.—"AMATEUR," *Totterdown, Bristol, May* 15.

A NOVEL "SWARM-CATCHER."

[3685.] The stock from which the bees "under the hat" in photo came, was a stray swarm I found the previous year in a hedge about two hundred yards from my house. I was puzzled for a long time as to where the bees came from, as there were then no bee-keepers in the immediate neighbourhood besides myself, and I knew they were not mine. Some time afterwards, however, I was informed that a gentleman had lost a swarm from a hive at Chorlton-cum-Hardy (Lancashire), quite a mile from where I got the stray swarm, so the bees must have crossed the River Mersey and the intervening meadows and alighted on the first hedge they came to in our adjoining county Cheshire, as stated above. I hived them in a skep containing

drawn out combs, and they worked splendidly, and on June 5 they threw off a grand swarm. My next door neighbour had placed an old hat on a stake alongside a row of peas to scare away the birds (in Cheshire parlance, "pay-boggart"), and it not only served that useful purpose, but it proved an attraction for the swarm, for the bees soon made themselves comfortable in it and were very reluctant to leave it. Anyhow, they stayed there while I went for a young friend of mine (whose hobby is photography) to come and take a snap-shot at them. He would not go near them at all,

A Novel "Swarm-Catcher."

until I had provided him with a veil. I hived the swarm in a skep which was sent away next day to a gentleman at Bury (Lancashire). So you see after twelve months' sojourn in a strange land the bees went back to the land of their nativity. I think bee-keepers would be wise in placing an old "shiner" on a stake in their garden in case a hive happens to swarm unexpectedly, for the bees are very likely to make straight for it, and I can truthfully say that it is the easiest thing in the world to hive a swarm of bees from an old hat.—JOHN YARWOOD, *Manchester.*

STARTING BEES IN SECTIONS.

WORKING FOR COMB AND EXTRACTED HONEY.

I have for several years past been very much interested in trying and comparing different methods of handling bees for comb honey; and after being in the business for eight years have had fair success. For the first five years I tried a different method each year. Three years ago (*i.e.*, in 1896) an experiment I tried succeeded so well that I followed it up, and have in a measure overcome the two greatest difficulties that I had to contend with, viz., loafing and swarming. We use the eight-frame dovetailed hives with section-holders for 4¼ in. by 4¼ in. sections, and our bees would always begin to "loaf" or hang out on the front of the hives when we put on the sections; indeed, most of them would do but little in the sections until they had lost several days, and then would swarm, thus losing several days of the first alfalfa bloom.

I had sixty colonies of Italians in my out-apiary, and in my experiment I tried to be quite fair. I took thirty supers of half-depth extracting frames full of comb from the home apiary, and put them on thirty hives in the out-apiary at the same time that I put sections on the other thirty hives. In four or five days the extracting-combs were full of new honey, and the bees active and busy at their work, while in the hives having sections on the bees were loafing, and some had swarmed.

I then raised the combs by putting a super of sections between them and the brood-nest. At the end of two weeks from the time of first putting on the combs, the sections under the combs were better filled than those on the hives that had no extracting combs on at all. As soon as the combs were sealed I put them away to extract, and thus had that amount of honey extra, while getting the bees started nicely in their section work. I had only about a third as many swarms from those hives as from the ones with sections and no extracting combs.

I liked the plan so well that in 1897 I had enough of those little combs built to furnish a super of them to every colony that was to be run for section honey.

I tried the plan again in 1898, and from seventy-five colonies at the out-apiary I had 8,000 fine white marketable sections, about 500 lb. of unfinished and imperfect sections, 1,500 lb. of extracted honey, about 60 lb. of beeswax, and two barrels of vinegar. We got short of fixtures, and I had to cut out some of my little combs and have the bees build them again to keep them at work. I forgot to mention that we sell a lot of those frames of comb to families for home use, as we can afford to sell them cheaper than sections. When we cut them out we do so after extracting, and then the washings make good vinegar, while the wax goes into the solar extractor, and is of the best quality. We leave half an inch of comb at the top of the frame, to save putting in foundation.

I do not believe we shall ever be able to overcome swarming entirely, but my plan stops the bees from "loafing" better than anything else I know of, and we had fifty-seven swarms this year, but no loafing in the out-

apiary. We have bought an extractor for that apiary, and will continue to run on that plan to start them to work. After the first super of sections is well started there is no more trouble about loafing. My neighbours' bees loafed and swarmed through all the best of the season, while mine were hard at work. I wish some one would try my plan, and report.—MRS. A. J. BARBER, in *Gleanings* (American).

[There, Mrs. B., you have struck a keynote I have been trying to sound for the last two years. I have found, as you say, that colonies given sections are often—yes, generally—loath to enter them; but if a set of extracting combs are given the bees will go right to work—that is, if there is any honey in the fields. Now, when those colonies get into the working fever (instead of swarming fever) they will keep right on, even if a super of sections is given them. Some of my friends could not understand how I could produce both comb and extracted honey on the same hive to advantage. The plan I pursued was the same as this, almost exactly. I *know* it has worked very satisfactorily at our out-yard, where I gave it my personal attention, not by directing the work, but by doing it myself. In many cases I used full-depth stories of extracting combs, but with colonies of moderate strength a half-depth story was used.

Now, I am not going to claim that I discovered this method before you did; but until some one else claims it I propose to call it the "Barber" method of producing comb and extracted honey.—ED. *Gleanings.*]

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING MAY 13, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
May 7....	30·39	48·8	59	36	23	46·8	—
,, 8....	30·19	54·2	61	41	20	50·4	·18
,, 9....	29·88	48 0	58	44	14	50·6	·16
,, 10....	29·88	45·0	56	43	13	49·1	—
,, 11....	29·88	55·5	61	45	16	52·5	—
,, 12....	29·91	47·8	52	47	5	49·4	·11
,, 13....	29·81	47·2	60	44	16	51·5	·14
Means	29 99	49·5	58·1	42·9	15 3	50·1	·59*

* Total, ·59 in.

Mean vapour tension, 0·281 in.; mean relative humidity, 80 per cent.; mean temp. of the dew point, 43°·1. The rainfall, viz., ·59 in., =13,347·57 gallons, or 59·59 tons to the acre, or 2·95 lb. to the square foot. For the week ending May 6, the mean temp., viz., 44°·7, was −4°·6, and the rainfall, viz., ·01 in., −·39 in. The mean temp., January 1 to May 6, viz., 41°·9, is +0°·6, and the rainfall, viz., 6·68 in., −·42 in.

In the B.J. for May 11, the mean temp., January 1 to April 29, viz., 41°·8, is +1°·0, should have read 41°·7 is +0°·9, for which slip I apologise.

FRED. COVENTRY.

Duddington, Stamford, May 15.

Queries and Replies.

[2200.] *Wax-moth in Hives.*—A fortnight ago I purchased a stock of Carniolan bees from a well-known apiary, and I have reason to think the hive is infested with wax-moth, and that the bees are troubled with dysentery. In the first place, I find a few grubs, similar to the enclosed, on a board on the ground, in the front of the hive. I also see half-formed bees, quite white, have been cast out, while there is a lot of little black pieces, of some hard substance, on the alighting-board. I also find a good many soft, brown patches on the tops of the frames. The bees look well, but we find a very large number of dead ones on the ground in front of the hive, which was quite new when they were put in it. 1. Will you, therefore, please advise me if I am right, and what to do to be rid of the trouble? 2. Is it possible for the sender to have known their state before delivery?—A BEGINNER, *Anerley, May* 13.

REPLY.—1. The larvæ sent is undoubtedly that of the wax-moth, and, so far as we can judge by your description, the "little black pieces" of hard substance are probably the excrement of the same larvæ, but without a sample we cannot say for certain. Strong stocks are never troubled with wax-moth in this country, and when the bees become strong in numbers they will rid themselves of the trouble. Meantime, any combs badly infested should be removed and burnt. 2. We cannot decide as to dysentery and cause of bees being cast out from the vague information given above, but the sellers of bees should and would probably have examined the stock before despatching, and they are the right people to inquire of as to the unsatisfactory nature of the purchase.

[2201.] *Preventing Second Swarms.*—Would you kindly tell me through the B.B.J. (1) How many days should elapse between the issue of a first swarm and cutting out of queen-cells to prevent second swarm? (2) One of my stocks has been casting out drones by the dozen from full-grown bees to larvæ. Can you tell me the cause of this? The bees have plenty of food in the hive and a nice lot of brood.—F. HAMSNAR, *Burgess Hill, May* 13.

REPLY.—1. If the bee-keeper is sufficiently experienced to enable him to select the most forward queen-cell, all the others may be removed on the seventh day after swarming. On the other hand, a beginner will do best by allowing the second swarm to come off; and, after securing the swarm in a hiving skep, open the parent hive, remove all queen-cells found on the combs and return the bees in the evening after sundown. 2. Assuming that you are quite correct in supposing the hive to be well-supplied with food the most likely cause of drones being cast out is the change for the worse in the weather.

[2202.] *Transferring Combs to Standard Frames.*—I may mention that I started bee-keeping three years ago, beginning with one stock. I now have three hives of the box-shape used in Austria, with a door behind, and the frames slide in grooves from the door, next to which is a glass partition. The frames are much smaller than those for the "Cowan" hive, into which I wish to transfer my bees. I therefore beg to ask :—1. How is the transferring to be done? 2. Must the bees be subdued before operating? 3. What is the most suitable time of the year to transfer? 4. For what purpose are the small frames called "shallow-frames," above the ordinary ones? I have your "Bee-keeper's Guide Book" but do not understand the object of these.—P. J. Blyth, *Prater Strasse, Vienna, May* 10.

Reply.—1. The instructions given on page 138 of "Guide Book" for transferring combs from skeps to standard frames apply equally in transferring from the frame-hive used in Austria. 2. The bees will need only the usual amount of subduing, by means of smoke, as when lifting out a frame for ordinary examination. Remove one comb at a time, and shake or brush the bees from it on to the alighting board, then carry the frame indoors and operate in a warm room. As each comb is securely tied into the frame set it in the new hive—ready at hand—and when about half the combs are transferred carry the hive containing them very carefully to the old stand, on which it is placed; then brush off all the bees from old frames and let them run into the new hive. This done, complete the transferring of rest of combs into the standard frames, and carry each one out as ready and set it in the new hive, covering down warmly when all is completed. 3. The present time is suitable for operating if weather is fairly warm. 4. The use and purpose of the shallow-frame is fully explained on page 60 of "Guide Book."

Several Queries and Replies are in type and will appear next week.

Echoes from the Hives.

Hatfield Heath, Harlow, Essex, May 15.—How tricky and trying to bee-keepers is the weather in spring! trying also to the strongest man and beast and bee. All through the spring of this year we have experienced weather in sandwich form—either long spells of wet and cold or strong, cold, withering wind, with severe frost at night, with just a warm day or two now and again in between. From May 2 we had, right into the second week, a strong marrow-chilling, nectar-killing east wind, so strong that large numbers of the laden, weather-beaten bees, unable to enter their hives, were either blown down or between the hives into the hedge beyond. What bee-keeper with a heart worthy of the name can but feel for those poor bees knocked out in their little life's battle—blown down or away, to chill and die in sight of "home"? How I looked and searched for the old hard-crowned hat, with worn and broken brim—not by the weight of £ s. d. for supplementing the "Royal" Show funds—but by age and good service; and a most important part of this good service is the many hundreds of chilled and weather-beaten bees that have been revived by placing the bees in its roomy crown upon my warm cranium. How grateful those revived bees always seemed, as with a soft, grateful buzz they left the hat to circle in the air and make for the old hive and home. In vain I searched for that hat, until I remembered that I had used it to crown a "scare-crow," an effort on my part to make the birds believe that my imps are always in the apiary-garden. That hat is lost to sight, but is to memory dear; it was blown fields and fields away by a recent westerly gale.

My bees are unusually forward, and forage is very late—much of it quite three weeks behind. I have found it necessary to super half my stocks; one I supered on May 2, as the bees were in need of more room. One stock had then a batch of queen cells formed, but between the bad weather and the super the swarm has been prevented coming off, and I have now had to add another super, there was such an idle crowd about the entrance to the hive. This second super has already been taken possession of, though there was very little honey in the first one. I consider this is the most trying time of the year for bees because so many bee-keepers withhold food that they would give if they could not see fruit trees in bloom. There must be in the imagination of some abundance of honey to be gathered if trees are gay with blossom. Frosts at night and chilling winds in the day are quite ignored.—W. Loveday.

Stratton St. Margaret, May 13.—I am pleased to say our elevating hobby is "booming" somewhat in Wilts. Some are reviving an "old love" and again "setting their house in order," and some are improving their ways and adopting frame hives. The first swarm I have heard of came off on Thursday, May 11, owned by a lady who will, I hope, adopt improved methods. On Saturday I heard of a strong stock starved in skep for want of a little attention—again a lady. Stocks are generally only fairly stong, as the weather here has been most treacherous during the last two months. I have not met with any case of "foul brood" yet, and now that the county has been parcelled out to experts, the pest may at least be kept in check, as I believe your advice to the "candidates" at Bradford last autumn, to adopt stringent measures, will be generally carried out by them. The reports *re* Wells hives are somewhat conflicting, but after careful consideration I am a firm believer in the system myself, and have put

two in use, of which I shall be pleased to report fully at a later date.—C. G. GILBERT.

Fryup, Yorks, May 15.—We have had fine weather since April 26, and bees have been carrying in pollen fairly well. I started winter with twenty-six stocks, one of which being rather weak, so I united the bees to their neighbours in the other end of a "Wells" hive. They are now all strong, and have brood in all stages. For the last few days we have had heavy rain and fogs, with a keen north-east wind, but yesterday (the 14th) was a fine day, and the bees started carrying in pollen faster than ever. If the weather would take up and become fine and warm, I think the honey season of '99 would be a great advance on that of last year. Fruit trees about here are white with bloom, and the hawthorn is coming out. White clover is looking well, with a thick growth on the ground but none in flower yet.—R. HUNTON.

Bee Shows to Come.

June 5 to 8 at Windsor.—Bee and Honey Show in connection with the Royal Counties Agricultural Society. Several classes for past season's honey. Schedules from A. D. Woodley, Hon. Sec. Berks B.K.A., 17, Market-place, Reading. **Entries closed.**

June 9 and 10 at Epping.—Show of Bees, Honey, and Appliances in connection with the Essex Agricultural Society. Schedules from Mr. G. F. Offlahertie, Monghyr Cottage, Loughton, Essex. **Entries closed.**

June 19 to 23 at Maidstone.—"Royal" Agricultural Society's Show. Bee and Honey Section under management of the B.B.K.A.

July 13 and 14 at Louth.—Honey, Hives, and Bee Appliances in connection with the Lincolnshire Agricultural Society. Bee Department under the management of the Lincolnshire B.K.A. Schedules from R. Godson, Hon. Sec. Lincolnshire B.K.A., Tothill, Alford. **Entries close June 13.**

July 21 and 22, at Knowle.—The annual exhibition of the Bristol, Somersetshire, and South Gloucestershire B.K.A. will be held in connection with the local Horticultural Society's show. Schedules from Miss H. Dawe, Long Ashton, near Bristol. **Entries close July 15.**

August 7 at Beddington Park, near Croydon.—Surrey B.K.A. Annual Show, in connection with the Beddington, Carshalton, and Wallington Horticultural Society. Increased prizes. Five Open Classes, including single 1-lb. jar and section, with free entry. Schedules from F. B. White, Hon. Sec., Marden House, Redhill. **Entries close July 30.**

September 6 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 30.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

W. J. F. (Fifeshire).—*Addresses of Appliance-makers.*—Our correspondent, who desires to go into bee-keeping, asks us to give the name of any bee-keeper or appliance-maker in the neighbourhood of Cupar, N.B., with whom he could communicate on the subject. Will some reader kindly supply the information asked for?

INQUIRER (Carlisle).—*Combs Built on "Sagged" Foundation.*—If, as we infer, the three combs removed when packing for winter are not irregularly built out by having "sagged" foundation (as those now in the hive are stated to be) we should use them as guide-combs for the wired frames of foundation it is proposed to insert. It is no use trying to get straight combs built between crooked ones, but with a couple of good straight combs on hand there should be no difficulty in gradually working the faulty combs to the outside of brood-nest and eventually getting rid of them altogether.

JNO. BERRY (Llanrwst).—*Will Labelling Exhibits Disqualify Them?*—Without specifically alluding to the particular shows you name, exhibitors must take for granted that a schedule which distinctly states that "no card or label must be attached to any exhibit" means that labels will disqualify. We should therefore advise that no labels at all be put on exhibits of honey in such cases.

W. LINTON (Co. Down).—*Pollen-choked Combs.*—If all the combs in frame-hive and skep from which the samples were taken are like those received, we should attribute the desertion of both by the bees to the fact of nearly all the cells being completely pollen-choked, and in consequence the bees dwindled away for lack of sufficient breeding room to keep up the population of the hive. The combs are quite useless except for the chance of getting a little wax from them by melting down.

T. M. (Fay-gate).—Comb contains nothing but dry, hard pollen.

C. J. G. G. (Swinton.)—*Diagrams for School Use.*—The only "Bee Charts" on bee culture in this country are the diagrams illustrative of bee culture and the relation of bees to flowering plants published by the B.B.K.A. These may be had from this office, price, with key, 4s. post free. 2. The only dummy of which Mr. Wells approves is, we believe, the one described some years ago in our pages. We have heard rather unfavourable reports of the Wells (?) dummy, in which saw-cuts are made to take the place of small circular holes as used by Mr. Wells.

ALFRED JONES (Southport).—*Photo-Micrography.*—1. The duration of exposure depends upon many elements, quality of lenses, power of objectives and oculars, quickness of plates, colour-glasses, &c., that it is impossible to state a time. Practice only can teach, especially as no two subjects will require the same exposure. 2. It is not desirable to single out for mention in print any special district or individual apiary where foul brood is alleged to exist.

*** *Notice of Trade Catalogues will appear next week.*

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

WANTED, Swarm in Exchange for cwt. of Soiled Sugar. WALLACE, Bramhall, Cheshire. 181

WANTED, 20 healthy Natural SWARMS. State price delivered. STAINES, Swinden-terrace, Dewsbury. 175

FOR SALE.—Blow's Honey-Squeezer, nearly new, 3s. 6d. M. B., Daisyfield, Putney.

SWARMS FOR SALE, 10s. 6d. each or 2s. 6d. lb. HOLLINGWORTH, Manor Farm, Wysall, Notts. 176

FOR SALE, BEES in Heather Hive, healthy, 25s. FURNELL, Vinneyden, Colinton, Midlothian, N.B. 170

PRIME Natural Swarms of English and first cross Italian BEES, 3s. lb. From 4 to 7 lb. swarms packed free. BAILEY, Itchingfield, Horsham. 157

ENGLISH MADE HONEY JARS (1-lb. screw-cap), 14s. per gross; sample, 6d. JAS. DYSON, Stainforth, Doncaster. F.N.

23rd YEAR. NATURAL SWARMS, 10s. 6d., 12s. 6d., 15s.; '98 and '99 Fertile Queens, 5s. ALSFORD, Expert, Blandford. 186

2-OZ GLASS, Tie-over, HONEY JARS (limited quantity), 2s. 9d. ½-gross, 5s. gross. Best quality. F. RUDD, Grimston, Norfolk. 180

NATURAL SWARMS of ENGLISH BEES at 2s. 6d. per lb. Box 1s., or return to E. GARNER, Broom, near Biggleswade, Beds. 177

PROLIFIC QUEENS.—Nuclei, Stocks, and Swarms. Address, E. WOODHAM, Clavering, Newport, Essex. 173

HIVES FOR SALE.—4 Bar-framed Hives well stocked with Bees. Apply, B. WAKELIN, Alford, Lincs. 172

"HONEY AND ITS USES." New edition, 1½d., 3s. 6d. per 100. "Mead, and How to Make It," 2½d. "Vinegar from Honey," 2½d. Sample bottle, 7½d. Rev. GERARD BANCKS, The Green, Dartford. 178

FOR SALE, TWO TOP SWARMS, end of May or beginning of June; twenty-four ready built Combs in Shallow Frames; 60 lb. Honey. LANSDOWN, Stow, Brampton, Bryan, Salop. 185

FOR SALE, Surplus, 10-lb. "Weed" Brood Foundation, 2s. lb.; Universal Feeders (used once), 9d. each; ½-gross wide W.B.C. Ends, 2s.; Four 1898 Prolific Queens, 4s. 6d. each. AVERY, Ripley, Surrey. 184

COMFORTABLE APARTMENTS for Brother Bee-keepers visiting Douglas. HORSLEY, Merridale House, Empire-terrace, Top of Castle Drive, Isle of Man. 183

TO BE LET, compact Nursery, Fruit, Poultry, and Bee Farm; stocks of bees, pigs, poultry, &c.; about £150; terms of payment could be arranged. Rent £20. GAMBLE, Corn Exchange, Woolston, Southampton. 179

BUYERS of SWARMS and HONEY should write at once to SPEARMAN, the honest and industrious apiarist, Colesbourne, Andoversford. Perfect satisfaction and safe arrival guaranteed. Lowest possible prices. 174

WHAT OFFERS, for Four Supers of new improved self-distancing Shallow Frames, with combs; Two dozen self-distancing Frames, in flat; and Four Section Crates to hold 21 4¼×4¼×2, and Two to hold 2-lb. sections. F. BRIDGETT, Kingsley Holt, near Cheadle, Staffs. 182

FOR SALE, 5 strong, healthy Stocks of BEES in good bar-frame (standard) hives, with lift for tiering up queen excluder and section crate to each hive. On rails, 27s. each. One skep with bees, 14s. Foul brood unknown here. W. D. HORSLEY, Westfield-gardens, Scarbro-road, Norton Malton. 171

LETTUCE PLANTS of Sutton's "Mammoth" White Cos (the largest in cultivation), 20, 2d.; 100, 9d. LEEKS for transplanting, 100, 4d. EARLY SAVOY PLANTS, 2d. a score; 100, 9d. PLANTS of BORAGE, 2d. each. HOREHOUND, 3d. a dozen. (MACKEREL SEASON.) FENNEL, a quantity for cutting; also PLANTS, 3d. and 6d. a dozen, and SEED, 1d. and upwards. Postages of plants extra. WM. LOVEDAY, Hatfield Heath, Harlow, Essex.

SWARMS, 3-lb. weight, 10s. 6d.; SALMON, First-class Expert B.B.K.A., Parkend, Stonehouse, Gloucestershire. 164

Prepaid Advertisements (*Continued*).

WANTED, OFFERS for Natural Swarms of BEES; guaranteed healthy. WHITTING, Manea, March. 162

SWARMS FOR SALE, 10s. 6d. each or 2s. 6d. per lb. Address, FRED BARKS, Rempstone, near Loughborough. 156

YOUNG QUEENS.—Fertilised, 5s.; Virgin, 2s. 6d. In self-introducing cages. HOWES, Melton House, Knowle, Bristol.

HONEY 4d. to 7d. lb. Bees, Stocks, and Swarms, 7s. to 14s. each. JOHNSON & SON, Soham, Cambs. 138

QUEENS, STOCKS, NUCLEI, and SWARMS. A few more orders can be accepted. List free. Rev. C. BRERETON, Pulborough, Sussex.

ABOUT 100 lb. pure WELSH HONEY FOR SALE. Sample 3d. JOHN EVANS, Caepwllhaelog, Abersoch, Pwllheli, North Wales. 141

GOOD STRONG NATURAL SWARMS with Queen, 12s. 6d.; Travelling Case, 1s. returnable. Good Second Swarms, '99 Queen, 8s. 6d. Guaranteed healthy. Orders taken now. WOODS, Normandy, Guildford. 166

LACE PAPER for GLAZING SECTIONS. 100 strips, 7d., 200, 1s. 2d., 300, 1s. 6d., 500, 2s. 3d., 1,000, 4s. Post free. Best quality. Neat Patterns. W. WOODLEY, Beedon, Newbury.

HONEYCOMB DESIGNS. Special Prices if ordered before July 1st. Sketches, 1s. each, returned from first order. CHARLES COX, Brampton, near Northampton. 137

PRIME NATURAL SWARMS of English BEES from my selected strain, 12s. 6d. and 15s. each, packing box, and put on rail free, through booking to all parts. Telegrams, "Woodley, Beedon, Chieveley." W. WOODLEY, Beedon, Newbury.

GOOD COUNTRY BUSINESS FOR SALE with Machinery. Jobbing work, undertakers, bee-hive and poultry appliance maker. Good chance for a pushing man. Apply by letter to "H," Office of *Bee Journal*, 17, King William-street.

WE LEAD, OTHERS FOLLOW.—TRANSPARENT CELLULOID QUILTS, 17 in. by 15 in. or 17 in. by 17 in. Reduced price 1s. 4d. each (post free 1s. 7d.) CELLULOID QUEEN EXCLUDERS 17 by 15 or 17 by 17. Reduced price 1s. 6d. each (post free 1s. 9d.) R. H. COLTMAN, 49, Station-street, Burton-on-Trent.

W. H. BROWN,

THE APIARY, PONTESBURY.

Try **Brown's Endless Dovetail Hives,** made of best pine, painted three coats, equal to what others sell at 21/6. My price only **10/6.** EXCHANGE HONEY, BEES.

Approval, Deposit.

MIND, CARRIAGE PAID.

APICULTURE.

WM. HERROD, Expert Apiarist and Lecturer to the British Bee-Keepers' Association. W. H. is prepared to take Engagements for Lectures (either singly or a course) on Bee-Keeping, and general Teaching in connection with the promotion of Technical Education for County Councils; also Lectures and Demonstrations with live bees at Agricultural and Flower Shows, &c. Apiaries managed by the day or season in any part of the country. Large number of lantern slides illustrating most improved methods. Practical instruction in bee-management given to those desirous of taking up bee-keeping. Hives examined and valued for purchase.

CANDIDATES COACHED FOR EXPERTS EXAMS.

W. H. being about to start on spring cycle tour of inspection to Kent bee-keepers, ARRANGEMENTS may be made for a PUPIL to travel with him.

For Particulars and terms, address,

W. HERROD,

HORTICULTURAL COLLEGE,

Swanley, Kent.

TO LANCASHIRE & CHESHIRE BEE-KEEPERS

W. CORKILL,

16, Diana Street, Stanley Park, Liverpool.

BEE HIVES AND APPLIANCES.

Best Quality at lowest possible prices.

A Trial solicited.

A. W. HARRISON

POTTERS BAR.

One of the oldest established Houses in the Trade.

CHEAPNESS and QUALITY combined.

For Free Price List of Bee Appliances apply to
A. W. HARRISON, Potters Bar.

Cat A Log

W. P. MEADOWS,

SYSTON, LEICESTER.

Royal Show, Birmingham.

6 Entries, 5 First and 2 Second Prizes.

NEW CAT-A-LOC,
with Prize Exhibits, Post Free.

THE YORKSHIRE BEE-KEEPERS' STORES.

WM. DIXON,

5, Beckett Street, Leeds.

UP-TO-DATE
HIVES and APPLIANCES
of every description.
SWARMS and STOCKS of BEES.

Catalogue post free.

A. H. YOUNG,

The Expert Southport Apiarist for BEE HIVES, APPLIANCES, and COMB FOUNDATION.

Finest Brood Foundation: 1 lb., 2s.; post free, 2s. 3d. Finest Super Foundation: 1 lb., 2s. 6d.; post free, 2s. 9d. New Weed Foundation, 2s. 3d.; post free, 2s. 6d. Finest Sections, 2 or 4 beeway: 50, 1s. 3d.; post free, 1s. 9d.: 100, 2s.; post free, 2s. 8d. Best Frames (Standard or Shallow), 1s. 2d. doz. Wax Extractors, 10s. 6d. Honey Extractors, 21s. Finest Clear Glass Screw Cap Honey Jars: 1 lb., 16s. 100; ½ lb., 10s. 6d. 100.

THE APIARY, 9, SEFTON STREET, SOUTHPORT.

UNDERMENTIONED GOODS ARE NEW, AT COST PRICE, AND READY FOR DELIVERY.

COMPLETE HIVES, with 10 "Cowan" Frames, 5/6 each; Bodies and 10 Frames, 3/6 each; In flat, 1/- less.

10 FRAME STANDARD HIVES and 21 SECTION CRATES, 7/6 each.

COMBINATION and "WELLS" HIVES on legs, reduced from 27/6 to 17/6.

UNICOMB OBSERVATORY, 5/- each.

6 to 10 FRAMES, 20/-.

SECTION CRATES, 1/- to 2/6 each; for Skeps, with roof, 2/- each.

CLARK'S SMOKERS, 2/6.

FUMIGATORS, 1/6.

PARKER'S FOUNDATION FIXERS, 9d.; CLARK'S, 1/6.

STANDARD FRAMES, 1/- doz.; 5/- 100. If made up wide-shouldered or dovetailed, double price.

EXCLUDERS, 16 in. square, bordered, 7d.; 6/- doz. Ditto, slotted, 1/- each.

TRAVELLING CRATES (bottle or section), 1/6.

SWARM ARRESTERS, 2/- each.

CORRUGATED PAPER for packing Sections, &c., 1/3 doz. yds.

"QUEEN" CAGES, 3d. each.

WIRED FRAMES (foundation), 6/- doz.

SECTIONS, 2/- 100.

FOUNDATION, 5 lb., 9/-.

Lists free.

EDEY & SON, Steam Joinery Works, St. Neots

MY

NOTED GUINEA OUTFIT

SHOULD NOT BE MISSED.

Sent to all parts of the World.

Testimonials by every Post.

THE ABOVE HIVE COMPLETE

with movable floorboard; 10 Frames, standard size; 20 Carr's Tin Ends; 1 Dummy Quilt; Super Clearers fixed to roof; 1 Section Crate fitted with foundation; 10 Sheets of "Weed" Foundation; 1 "Bingham" Smoker; 1 Net Veil; 1 Bee Book; 1 Feeder; 1 Queen Excluder. Sent, carriage paid, for 21s.

ADDRESS—

H. HUTCHINGS,

STEAM HIVE WORKS,

Send for Price List. **St. Mary Cray, KENT.**

Editorial, Notices, &c.

USEFUL HINTS.

(*Continued from page* 192.)

WORKING FOR SURPLUS HONEY.—The article by an American lady bee-keeper on "Working for Comb and Extracted Honey," reprinted from *Gleanings* in our last issue, affords a practical illustration of what is well known to all experienced bee-keepers whose habit is, so to speak, to work with their eyes open, viz., the fact that considerably larger yields per hive may be secured in surplus-chambers filled with combs for extracting than those in which comb-honey in 1-lb. sections is the object worked for.

The principle involved in the admitted advantage gained, so far as weight of surplus, is nothing more than the known fact that a body of bees (numbering, say, 10,000) working in one continuous cluster will generate heat much more readily than the same number divided off into a score of small clusters, each lot occupying a separate little chamber of its own, as when comb-building in a 1-lb. section. Thus, when we take into account the high temperature necessary for the production of wax in the body of the bee, the advantage of co-operation is obvious. And in this way the rapidity with which eight or nine shallow-frames of comb are built out and filled with honey, compared with the time occupied in filling the same weight of produce in 1-lb. sections, is no less clear. It may, therefore, be worth considering whether it is not advisable for some of our readers—preferably such as have a demand for honey in comb—to try an experiment having for its object the production of comb honey in attractive form at a price so moderate as to bring it into more general use than at present.

We use the term "attractive form" advisedly in the present case, and although it may, in the eyes of some, appear a retrograde step to hark back to the super of more than fifteen years ago, we venture to say there is no comparison, so far as attractiveness in the eyes of a purchaser, between a super of comb-honey, as exhibited at shows in the days to which we refer above, and the 1-lb. section of to-day. In making this assertion we do not for a moment suggest that the latter should give place to the former; the advantages possessed by the section are too numerous for any sensible man to even minimise them. Our object is rather to show that the super we have in mind might forward the sale of comb-honey in both forms. In other words, we think the idea worth trying, whether a glazed super holding about seven combs—spaced 2 in. apart—built on bars (not in frames), and holding from 17 lb. to 18 lb. of honey, sold at about 10s., would not fill a want? Anyway, we have no hesitation in again saying that two or three such supers, displayed in a tradesman's window, would invite the attention of buyers for household use in a favourable degree, far and away above anything in the shape of sections and jars of honey could possibly do.

The idea of such a trial as we propose suggested itself to us on reading Mrs. Barber's remarks on page 195. "We sell a lot of these frames of comb," she says, "to families for home use, as we can afford to sell them cheaper than sections." This is one point we want to impress upon readers. Another is that such supers as we refer to are worked with far less labour than racks of sections, and the bars of comb can be sold singly or in bulk as required. A third point we claim for the super is its safety in transit by rail. Finally, let us say we do not write this without "knowing whereof we speak," for the very supers referred to were produced in dozens by ourselves nearly twenty years ago, and sold well at 30s. apiece! This was, of course, in the days when our Cheshire clover honey brought 1s. 6d. per 1-lb. jar, and comb-honey 1s. 6d per lb., but there is no doubt in our own mind that the supers we refer to containing 18 lb. to 20 lb. of honey will pay well to produce for sale at 10s. each; single bars of comb realising 1s. 6d.

If sufficient interest is shown by readers we will describe next week more in detail the method of producing them—indeed, there is nothing new in it, nor is the plan of working ours, being well known to old hands at the craft; but the two-inches-thick combs of luscious honey so graphically described by "Lordswood" on page 125 are still vivid memories in the mind of the writer, whose productions caused our late dear friend to write: "Yes, I remember those exhibits of yours; it was *bee-keeping* then!"

LANCASHIRE B.K.A.

MEETING AT SOUTHPORT.

In consequence of adverse weather the afternoon lecture and bee-demonstrations arranged to take place at the apiary of Mr. Rounds was postponed to the 27th inst. Mr. Rounds, however, having placed his dining-room at the service of the Committee, the meeting, fixed for 6.30 p.m., was accordingly held therein. Present:—Mr. Geo. Rose (in the chair), Messrs. J. N. Bold, A. M. Fielding, J. F. Williamson, A. Jones, F. Round, Major Campbell, Geo. Roberts, T. Mottram, and Hon. Sec.

The minutes of last meeting having been read and confirmed, Miss Kemp, Bispham Lodge, Blackpool; Rev. L. C. Wood, Singleton Vicarage; and W. Talbot Bretherton, Esq., Leyland, were elected Vice-Presidents.

The following local secretaries were elected:—Hawkshead and district, Dr. Allen; Stretford, Mr. Smethurst.

Expert's Tour.—Over 100 bee-keepers had been visited, and letters were read expressing great satisfaction with the manner in which the expert (Mr. Kirby) did his work. Foul brood was found in several places, badly-affected stocks being destroyed, and in slight cases the bees had been removed from brood and dealt with as artificial swarms, after destruction of combs and brood. The Hon. Sec. reported that he had provided the expert with carbolic acid and soap, also naphthaline, and had given strict instructions as to disinfection before continuing his visits; and, from reports received, he had every reason to believe these instructions were being fully carried out.

Mr. F. H. Taylor, First-class Expert B.B.K.A., was appointed lecturer to the Association.

The bee-tent was promised for the Hawkshead Horticultural Society on August 26.

Other general business followed.

Mr. Round having most hospitably entertained the committee, a cordial vote of thanks was accorded.

Next meeting, Blackpool, June 10.—F. H. TAYLOR, *Hon. Sec.*

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondent are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[3686] We are now in the fourth week of May, and no "grand bee-days" have cheered us so far in this district. Last week we had the usual boisterous weather we get from May 15 to May 19 or 20. Tempestuous cold winds that verifies for May, 1899, the truth of the adage, "Ne'er cast a clout till May is out." The tradition of St. Dunstan's compact with Apollyon is probably so well known that repetition here is unnecessary as to the cause of these days of March-like weather coming in the middle of the month. But notwithstanding the inclemency of the weather vegetation has made rapid strides—especially the weeds. Bee-keepers are, however, not so prone to decry the weeds from which bees gather pollen and honey as gardeners in general are.

I notice your correspondent, "Cheviot" (3671, p. 183) has not been successful with his zinc-covered roofs. Probably his failure results from not turning enough zinc under the roof eaves, and in consequence the wet has run under and reached the wood, which is thus saturated with moisture. I assure "Cheviot" that my hive roofs covered with zinc laid flat on are always dry. The same may be said of gable roofs, which erstwhile were wet throughout the winter; but since being covered with zinc are now always dry in the wettest of weather. The hives at my home-apiary stand on a sandy soil, and those at my Stanmore apiary on a clayey retentive soil, yet in both apiaries zinc-covered roofs are always dry. I should not care for the Stockholm tar, recommended by "Alpha" on the same page, because of expecting to find it sticky in hot weather, or if the smoker was left standing on it. On the other hand, if the ends of hive-legs were saturated with Stockholm tar it would, no doubt, add to their longevity considerably.

I am glad to see "W. R. N." (3,677, p. 186) finds the solar wax-extractor a success; but without knowing what "tiffany" is like, I should think strainer or cheese-cloth, as it is called, would answer the purpose, and could be burnt up with the refuse, or possibly the material would peel off, and could then be used over again.

Swarm Catchers, by which term I mean natural swarm catchers, will soon be wanted, and can be easily made out of peasticks or faggots of hazelwood. These tied into small bundles and placed in a leaning position in front of the hives, a few yards away, are often taken to by the first swarms that come off, and are then so scented by the bees that after swarms nearly always settle on the same place. A few old straw skeps fixed on short stakes in the ground also offer an inviting place for the swarms as they come off. Then there are the mechanical self-hivers with a compartment in which is the alluring bait of full sheets, or it may be only starters of foundation on which the new swarm is expected to commence work and establish themselves in the bee-master's absence. The selection of any one of these, interspersed with a few "shiners" such as Mr. J. Yarwood commends to notice on page 195 last week must be left to the apiarists, or the needs and also production of their localities.

The season of queen breeding is again with us and those who intend to secure the finest possible queens should select their best stocks for breeding from those noted for gentleness, honey gathering, and good wintering qualities. It has been argued that bees of a gentle strain were not equal to bees of a vicious nature in honey gathering qualities, but I beg to differ from that opinion, as years of close observation and working (coupled with a continued register of the hives in which I have handled bees of a gentle, docile strain) has proved that bees which it is a pleasure to handle compared to others which resent and show fight on the least disturbance of their hive, except they are subdued with smoke, are superior in the output of honey. It takes time to weed out the trait of viciousness which may be transmitted by the queens of your best selection mating with drones from a hybrid or vicious strain a mile or two away. This, of course, cannot be prevented, and often thwarts the best intentions of the queen-breeder. If it were possible to control "mating" we could soon breed out undesirable traits, but we must go on selecting our best stocks to breed from, and if the apiary is fairly well isolated the selection not only of queens, but also of drones is fairly in the bee-master's hands. In producing drones, don't allow them to be bred in the same hive as your queens. With a little trouble this may be prevented, a sharp knife will settle a whole patch of drone-brood in a moment; or drone-traps may be used, allowing only the desirable drones liberty. In the latter case, however, see that the drone-rearing hive has a goodly number, or the queens may remain virgins and perpetuate drones only.—W. Woodley, *Beedon, Newbury.*

CELLULOID QUILTS AND EXCLUDERS.

ARE THEY DANGEROUS TO USE?

[3687.] The letter from Mr. George Rose in your issue of May 18 (3682, p. 194), on the inflammability of celluloid quilts, so exaggerates any slight danger that may exist that it appears necessary to place the actual facts of the case before your readers. I have probably had the longest experience of celluloid quilts and excluders, being, so far as I know, the originator of them, and, although used in my apiary for several years, I have never yet had the slightest accident with them. It is quite a mistake to suppose that celluloid is easily ignited by a spark. In order to test it, I placed a piece of celluloid quilt upon a sheet of calico and showered a number of sparks upon both from smouldering brown paper, as it is used in bee-smokers. The calico caught first, and when, after about fifty sparks had fallen upon it, the celluloid also ignited, it smouldered gently, without any visible fire, and went out again after about a square inch had been burnt. I tried a similar experiment with some jute sacking (a material frequently used about hives), and found that this was even more readily ignited than cotton, and, of course, far more easily than celluloid. It is a matter of every-day experience that celluloid articles are practically safe. Millions of such articles are made every year, and are in constant use without giving rise to accidents. Collars, combs, heels, gear-cases, and innumerable decorative goods are turned out in increasing quantities year after year without that legislative restriction which would inevitably follow did they involve any danger to the public. It is quite true that one firm having a considerable business in the manufacture of zinc excluders did object to perforate the celluloid when I first introduced it; but they gave a very good commercial reason, and did not resort to an imaginary risk for an excuse. In the manufacture of celluloid articles the material is heated, pressed, drilled, punched, sheared, sawn, polished—in fact, treated like wood or metal without any risk to the workers.

From your advertisement columns I am glad to see that several appliance-dealers are now supplying celluloid, and that the imaginary fears of the "many firms" mentioned by Mr. Rose will not prevent those bee-keepers who study their own comfort as well as that of their bees from obtaining either quilts or excluders. It is a great convenience just now to be able to see the work going on in the sections through these transparent quilts without disturbing a single bee or lowering the temperature of the hive. About one minute suffices to examine a rack, and as no smoker is required, those terribly incendiary sparks are necessarily absent.—Walter F. Reid, *Fieldside, Addlestone, May* 22.

[3688.] Referring to the communication (3682, p. 194) on celluloid quilts and excluders, kindly allow me to correct the statements *seriatim* as to the danger of using celluloid for quilts and excluders. 1. A smoker, if properly made, does not emit sparks. 2. Celluloid is nothing like so inflammable as suggested by your correspondent. The following, I think, will prove this:—To test it I have placed a lighted match on a piece of celluloid, such as is used for the above purposes, and I find that quite twelve seconds elapsed before it commenced to take fire; and a puff easily extinguished it. 3. When you light a piece of celluloid, it does not blaze up instantly, but burns slowly, after the style of a firework, coloured light, or smokeless powder. 4. The reason why some makers refuse to perforate celluloid sheets is because of the danger arising from the friction, which is totally absent in hives.

In conclusion, I think it might be well to get our Editor's opinion on the danger or otherwise of using celluloid for the purpose

referred to.—R. H. Coltman, *Burton-on-Trent, May* 20.

[Mr. Reid's letter on preceding page is so conclusive as to render any further comment needless.—Eds.]

FAILING QUEENS.

AN UNUSUAL EXPERIENCE IN OVIPOSITING.

[3689.] When examining a small stock of bees I had bought early in April, I found a queen who was evidently failing, there being only a *very* small patch of brood, nearly half of which was *drone*. I took the queen out in consequence, with a view to putting in another, and was letting her run over my hand in a warm room (she could not fly), when she stopped on a brown leather finger-stall I was wearing on a damaged finger at the time, and after poking about a little she stepped on to the next finger, worked her abdomen, and then laid an egg on the leather finger-stall. Still standing on the same spot, she laid four eggs in one row and three in another, about the same distance apart as in worker cells. Altogether she laid fourteen or fifteen eggs while we were watching her—twice two at a time. I endeavoured to photograph her several times, I am afraid unsuccessfully. I made careful drawings of the way the egg was deposited, as we were watching her a long time and her repeated efforts enabled us to do this with some accuracy. Twice she emitted a drop of clear liquid like water during pauses in her egg-laying.—*Military Bee, Lancs.*

CONTROLLING SEX IN BEES.

[3690.] I send you by this post a copy of the *Jersey Times* of May 9, with a par marked for your perusal, and if it should be of interest to our B.B.J. readers I should be pleased to read your comments thereon. There is, no doubt, a variety of opinions on the power of man to control at will the sex of young bees, and I have read all which has appeared of late in B.B.J. on this question, but, like "Thomas," I am yet hard of faith. With best wishes for success of *Record* and Journal.—William W. Kay, *Jersey, Channel Islands.*

[The cutting forwarded is an abridged report of a lecture delivered on the 3rd inst. under the auspices of the Jersey Natural Science Association, by Mr. Peter Bois, on "The Habits and Uses of Bees." The special portion of the lecture to which Mr. Kay draws attention relates to what is stated in the *Jersey Times* to be "a valuable practical discovery by the lecturer," which "discovery" is declared to be the power of "controlling at will the sex of young bees. Before making any such personal "comments" as we are invited to do, we think it well to ascertain from Mr. Bois—who is an old and esteemed reader of our Journal, besides having contributed valuable articles relating to his bee-studies in this Journal—how far his observations on the subject referred have been quite correctly reported, seeing how easy it is for a non-technical editor or reporter to make unintentional mistakes when dealing with the natural history of the bee. We shall, therefore, draw the attention of Mr. Bois to a paragraph in the report which reads as follows:—"Coming to a valuable practical discovery by the lecturer, *we find that he has been successful in controlling at will the sex of young bees.* (The italics are ours.—Eds.) It has long been known that the workers can, by alteration in feeding, produce a queen bee from a larva that would otherwise become an ordinary worker or a non-functional female, but Mr. Bois has gone further, for, by care in regulating the temperature or by other precautions against disturbance within the hive, he assumes that practically all the eggs laid during summer produce females. The secret lies in the fact that so long as the queen-bee is fed abundantly, protected from chills, and lives in an equable temperature and free from the excitement of any threatened danger, the eggs laid will almost all be workers and not drones. The absence of 'checks' favours the production of workers; the reverse causes an abundance of drones."

We shall hope to be favoured with a line of reply for publication in our pages.—Eds.]

ARTIFICIAL SWARMING IN MAY.

IS IT SAFE?

[3691.] I would not occupy your valuable space by commenting upon the notes of your correspondent who signs himself "Amateur," (3684, page 194), last week, but silence would be taken by beginners as giving assent to what is recorded in those "Notes" being accepted as sound bee-keeping. I notice that a good many beginners are more or less guided by what is placed on record in your pages, and that being so I trust you will permit me to say, practices known to be risky, and even dangerous, should not be allowed to pass without a word of comment by way of caution. Your correspondent first mentions having made an artificial swarm for a farmer in the middle of May; a risky proceeding in any year at so early a date, and with such weather as we have experienced this spring, I call it quite a dangerous proceeding, especially as the bees were those of a skeppist. If that swarm was left to the mercy of the weather and its owner, I fancy that (if alive at all) its present value will be very small, and in the old colony there will probably be a quantity of chilled brood after the cold and damp experienced of late. This is how hotbeds for propagating disease are formed. Your correspondent then goes on to describe how he gets his bees to take water by putting sugar in it. This, too, I consider is a dangerous proceeding. Bees will carry all the water that they require; in fact, it is difficult to prevent them getting what they

(*Continued on page* 204.)

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

We are very glad to present a view of Mr. Blackwell's bee-garden as one of "The Apiaries of Our Readers," not only for the pleasure of showing into what distant parts of the world the B.B.J. goes, but of hearing from our good friend some account of his bee-keeping at the other side of the globe. In forwarding the picture, he says :—

"The photo shows part of my apiary on the Pahi Creek, Kaipara Harbour, New Zealand. It consists at present of thirty-six colonies, chiefly Italian and hybrid bees, in eight-frame Langstroth hives, and is run mainly for extracted honey, as the local market will not take section honey. The hives and frames are all home-made, on a home-made circular-saw bench. I use the American style Hoffman self-spacing frames. The figure to the right is 'yours truly,' and the one to the left an assistant on the farm and apiary. The hive in the foreground is a model weather-board cottage with shingle roof and verandah, which took first prize at the local show here. The trees are native "bush," except the one on the extreme left, which is a *Pinus insignis* seven years old, and 70 ft. high. It will be seen from the photo that about one half of what might be bee pasturage is salt water, and this, of course, materially reduces the number of hives that can be kept. There is a belt of mangroves about 200 yards wide on the edge of the water, and in some seasons the bees work on the flowers of them. Immense numbers of bees are lost in the water which is about three-quarters of a mile wide. The average crop of honey in a fairly good season is 100 lb. per hive, and the price realised 2½d. to 3d. per lb. It makes my mouth water to read of the prices obtained by readers of the B.B.J. for their honey. My honey is got mostly from bush trees, and is very thick, more a jelly than a liquid, so that I have a great difficulty in extracting. I have a Cowan reversible extractor and wired frames with heavy foundation, but the honey is so thick that the extractor is quite useless in the early part of the season. I have tried various devices, presses, &c., without as yet finding a very satisfactory plan.

MR. FRANK B. BLACKWELL'S APIARY, PAPAROA, KAIPARA, AUCKLAND, N.Z.

"There are very few frame hives in the district, and very few hives at all considering the number that might be kept. The reasons, no doubt, are the low price of honey, and the numbers of wild colonies in the bush, which any one may take.

"I have been a subscriber to your journal for several years, and am much interested in the illustrations of the 'Homes of the Honey Bee,' mine being a very far-off 'home' indeed, but if you care to make use of the photo, I will be very pleased to see it in the pages of our BRITISH BEE JOURNAL."

(*Correspondence continued from page* 202.)
want if it is within reach, and to encourage them to do so by putting sugar in the drinking dish is to encourage them to fill the cells of comb in their hive with raw stuff—sweetened water, in fact—that is both useless and dangerous. If bees are in want of food, let them have it in the form of syrup properly prepared as such; and if they require water, provide a regular supply, and they will carry in all they require.—Wm. Loveday, *Hatfield Heath, Harlow, Essex, May* 22.

NON-SWARMING.

[3692.] I have observed on many occasions in the B.J. how anxious some bee-keepers are to prevent swarming, and I dare say not one more so than myself, particularly when bees will persist in swarming in unpleasant neighbours' gardens, and give the following mode adopted by myself for what it is worth.

In 1893—one of the finest years in this district, at least for honey in abundance and of the finest quality—I had occasion to place on a strong stock a second body of ten standard frames with full sheets of foundation, which in due course were rapidly filled, and on top of these (not all at once) three racks of sections, nearly all of which were beautifully filled and sealed, giving me over 160 lb. surplus besides the ten bars in brood nest chock-a-block. The result was most gratifying, and as I had no swarm from this hive I made up my mind to do the same next year (which, however, was an ordinary one), *i.e*, to put on the second body with ten standard frames and full sheets of foundation, with the result again that I had no swarm. This induced me the following year to try other two hives on the same principle—the result again in all three cases being no swarms, and since then I have adopted this plan with all my hives for run honey and without getting a single swarm; however, on the contrary, those hives I run for sections will swarm.

When I find the ten bars are not sufficient for the season, instead of putting on racks I remove two or three well-filled frames and put empty ones in their place. At same time I must state that I do not always put on frames with full sheets of foundation as I occasionally put starters only of about an inch in depth of foundation in two or three frames which I place in the centre of each hive alternately between the full-sheeted frames as I fancy they are built more evenly. This I can sell readily as comb honey and at a better price than the sections.

As I find the frames will not always hang perpendicular, I fix a T (t) headed wire nail inside of front and back of hives and slip the frame down between them, which keep them in their proper places.—Henry A. Webster, *Gourock, May* 19.

N.B.—The excluder as usual being always placed on top of brood nest.

MY LAST SEASON'S (1898) WORK.

[3693.] I began the season with fourteen hives, including one containing two stocks, one over the other, with excluder zinc between, both working in same supers.

Sold:—1,155 lb. extracted honey and eighty-four sections; also one stock, 30s.; 13½ lb. wax, £1 0s. 2d.; gross receipts, £46 0s. 3d.; expenses, £10 0s. 4d.; total profit, not counting my labour, £35 19s. 11d. Gave away:—50 lb. extracted honey, and fed back to bees this spring 48 lb. in sections; four racks of sections spoilt, my bees refusing foundation and building on to dividers. No account kept of honey consumed in the house. Eight dozen 1-lb. jars left on hand.

No surplus was gathered till after June 15. The best second crop of white clover I have ever seen. Good weather for the limes. No honey dew stored though plenty about. All hives swarmed but two.—H. C. H. *Longparish, May* 22, 1899.

HONEY IN STONE JARS.

[3694] In "Sainfoin's" letter of April 6 (3631, page 135) he rather boasts of putting run honey of a bad colour into "beautiful cream jars of earthenware," because "in glass jars it did not look quite up to the mark." Very ingenious, no doubt, but I hope that other bee-keepers will act with what I call more perfect honesty and not follow his example by concealing bad goods in "beautiful jars." Doubtless he thought it "great fun" to deceive the public. In the future I shall be careful only to purchase *glass* jars. I also quite agree with your remark, it is hardly "great fun" when our neighbours are stung.—E. O. B., *Guilford.*

Queries and Replies.

[2203.] *Driving Bees without Causing Robbing and Fighting.*—In the "Guide Book" we are instructed before driving bees to "remove them to a quiet spot." Last autumn I removed three stocks in skeps to a very quiet spot, but found that while driving the last stock robber bees and wasps had found me out, and fighting ensued, causing me great trouble. I therefore ask how far away from hives I should have taken them; also how could I have prevented the wasps from causing such mischief? Wishing B.J. every success.—W. J. R., *Cricklade, May* 8.

Reply.—The driving of several stocks of bees from skeps should never be undertaken by an inexperienced bee-keeper. Nor is it possible to give instructions in print that will enable the operator to guard against such unexpected contingencies as an attack by wasps. We have known the apiaries of cottager skeppists to be nearly ruined by an

injudicious beginner undertaking to drive half a dozen skeps out of a dozen, and causing the bees to start robbing all round, through ignorance of the risks to be guarded against. The best of all lessons in this direction is to watch a skilled bee-man carry out a driving operation of the kind referred to. We should consider twenty or thirty yards quite far enough away from the hives if a "quiet spot" could be secured at that distance. But, so far as wasps, their nest might be located just at the spot chosen.

[2204.] *Dealing with Suspected Foul Brood.*—I have been overhauling my stocks yesterday and to-day, and find one hive with nine or ten frames full of bees, honey, and brood, but I am rather afraid this one is diseased. I have enclosed a piece of comb for your inspection; there are several suspicious-looking cells. The same hive is marked doubtful for 1897 and 1898. Would you kindly say what its real condition is, and if I must destroy the bees and comb at once, or might I put the bees in a clean hive, with full sheets of foundation, and feed up for a while?—ANXIOUS E. J., *Cornwall, May* 4.

REPLY.—The comb is undoubtedly affected with foul brood, and as the stock is strong and season favourable, you cannot do better than deal with the bees at once by getting them off the combs and treating them as a swarm. See "Guide Book," page 148.

[2205.] *Managing Swarms.*—There is a colony of bees in the roof here, and on May 2 they gave every evidence of swarming, but at 12 o'clock it clouded over, so they did not issue. To-day is very fine, so I hope they may swarm. 1. How soon after a swarm leaves is the new queen hatched? 2. If the swarm is prevented one day, or say two, is it unable to issue until the bees have built fresh queen cells, or would the bees guard the young hatched queen from the old queen until the weather enabled the swarm to leave? 3. I have been given a swarm, which I took in a wooden box, but as I am not returning north until May 16, I have put it up as a hive in the garden. I shall want to put it into a frame hive when I get home; how am I to do so? as the bees will have built combs and have brood by then. Could I place the box over the frames with excluder, and let them work down, as if it was a skep put on?—MERRIVALE, *Neyland, Pem., May* 4.

REPLY.—1. Generally about the eighth or ninth day. 2. We must assume that your query refers to the issue of a second swarm, and this being so, reply:—The bees protect the unhatched queen-cells until the young queen has departed with the swarm. It not seldom happens, when bad weather has delayed the second swarm, that one or two (sometimes more) of the younger queens escape from the cell and accompany their elder sister along with the swarm. 3. You had best allow the bees to work in skep and set it above frames as proposed in mid-June.

[2206.] *Doubling and Storifying.*—Does the plan (described on page 57 of "Guide Book") of working three or four hives one on the top of the other, and keeping the two lowest for brood nests, answer as well for sections as for frames for extracting, and tend to prevent swarming? 2. Are there any experts to represent the Bee-Keepers' Association to advise beginners in this neighbourhood? I am on the Bucks border of Herts. I have only just begun, so please excuse the question.—LONE JACK.

REPLY.—1. A careful perusal of what is said in "Guide Book" (p. 57), and reference to the illustration on p. 59, will show that the doubling and storifying method is used only in working for extracted honey, not sections. 2. There is no B.K.A. either in Bucks or Herts, but you could join the Berks Association, the Hon. Sec. of which is Mr. A. D. Woodley, 17, Market-place, Reading.

[2207.] *Neighbour's Bees and Foul Brood—an oft-told tale.*—Can you kindly advise me as to the best course to pursue under the following circumstances in order to save my bees? 1. My neighbour has hives—the bees in which are affected with foul brood—which he persists in leaving exposed to depredations from my bees. I can see them robbing his hives, and have already found slight traces of disease in two of my hives. 2. Is is any use spraying my hives and combs with naphthol beta?—E. S., *North Devon, May* 5.

REPLY.—With so many cases of what Americans would call "pure cussedness"—to use an Americanism—as have come to our knowledge, cases which inflict cruel wrong on unoffending persons, can one wonder at a couple of similarly injured bee-men taking the law into their own hands by pouring a pint of paraffin oil on a rotten and diseased old skep, setting fire to it, and burning the lot! But until compulsory powers are obtained for dealing with such cases as the above there is no course for law-abiding folks but appealing to a neighbour's sense of justice. 2. With your bees robbing diseased hives of their stores as stated, no remedy you can use will avail in keeping your stocks in healthy condition, for any good the remedy may do is nullified at once.

[2208.] *Increase or Surplus First—Which?*—You have been so kind in answering my former queries that I venture to trouble you again. I have a hive which did not swarm last season, and to increase my stock I am anxious to have a swarm from it this year. The bees are now strong, busy gathering both pollen and honey, and fill the hive, but I see so few drones. The few, however, are very large ones, but do not increase in number. A few days ago I had a swarm given me, and yesterday I saw the drones from the old hive entering the one in which

the swarm are hived on a stand a few feet distant. I therefore contracted the entrance and the drones then returned to their own hive. It it probable they acted thus owing to the crowded state of their own domicile? As through the glass at side of hive I can see the bees filling the outermost comb with honey, would you recommend I should super if they do not swarm by the end of May?—E. GREVILE, *Weston-super-Mare, May* 12.

REPLY.—If the bees are gathering honey fast, as stated, we should certainly "make hay while the sun shines," and super at once. The fact of the hive not swarming last year adds to the probability of its doing so this, even if supered. The action of the drones referred to is quite natural. They seldom stay long with a swarm even though they may join the latter, but make their way back to the parent hive.

[2209.] *Bees Casting out Young.*—My strongest stock of bees have been casting out live young ones on and off for the last ten days. They have plenty of honey in their super (shallow combs), and have been regularly fed with combs of honey since supering on April 27; before which time there were surplus stores in the hive. They are on ten standard over ten shallow brood frames. 1. I enclose three of the bees cast out to-day, which were all alive when I picked them up. 2. Can you give the reason of their behaviour?—H. C. H., *Longparish, Hants, May* 22.

REPLY.—1. The young bees sent are aborted, all of them, having an imperfectly developed wing or wings. The mischief is caused through insufficiency of the warmth necessary for properly developing the insect while in the pupa stage. 2. Bees invariably cast out any maimed or aborted members of the community, no matter what or how caused.

Echoes from the Hives.

Ayr, N.B., May 20.—During the month of May the weather, on the whole, has been very trying. Stocks hereabout that have been looked after are fairly strong, and will be in good condition for the white clover. I have some ready for supering, but as there is very little honey to be got, I am removing a brood frame or two to strengthen some of the weaker stocks. This week the weather has been so bad that I had to feed some of the hives. The fruit blossom is nearly past now, and there is very little else until the clover. I read with great interest Mr. H. Brice's articles on foul brood. I am sure that bee-keepers are deeply indebted to him for the great trouble and expense he has been to in making so searching an investigation. Bee-keepers who have read the papers will understand how difficult it is to kill the spores and how they will live dormant a long time until introduced into a proper medium; then the disease breaks out, perhaps after the expert has made his annual examination and declared them healthy. On the next examination the disease is discovered and the bee-keeper sends a note to the secretary saying that the expert carries the disease about with him. This is scarcely fair to the expert, because having nothing to gain and a great deal to lose, he is very careful when dealing with diseased colonies. In reply to "W. J. F.," *Fifeshire* (page 198), I might say that, as far as I am aware, there are no appliance makers nearer than Messrs. Steele & Raitt, Wormit, about fifteen miles from Cupar. A visit to them would prove both interesting and instructive. One or two shops in Cupar sell appliances retail. Mr. Mason, shoemaker, Springfield, is an old hand in the craft, and I am sure would be pleased to give him advice on the subject.—EXPERT, *Doonfoot.*

Wellington, Salop, May 22.—I regret to say my echo is not a cheering one, for rain is falling as I write, to wind up one of the worst days for bees that could well be imagined. I have had an experience that is altogether new to me, that of commencing spring feeding with syrup on May 22, while all around the trees are laden with magnificent blossom! Late apples and horse-chestnut, with the hawthorn just coming out; yet it is practically useless to the bees. Last week I found two of my stocks full up with brood on nine frames. I added the tenth and prepared by supering for a grand time. Three days after supering the bees were without food, and thus it is I am bound to feed. Both these queens occupied with brood twenty frames (ten shallows and ten standards) last year. Well, Mr. Editor, we must not be discouraged. I believe there are good times coming. I have never had a *bad* season yet. But then I am young in the craft. I commenced bee-keeping five years ago. My first step was to read the BEE JOURNAL for a whole year, then I thought I was fit for a swarm. And now, when I read of other bee-keepers' losses, all I do seems prosperous. Even now we are not without hope, for to-day we have cleaned and made ready nine or ten crates of ready-drawn shallow combs in expectation of the harvest. May we not be disappointed.—JAS. CLAY.

NOVELTIES FOR 1899.

QUEEN-CLIPPING DEVICE, QUEEN-CAGE AND CELL PROTECTOR.

Mr. W. P. Meadows has sent us on samples of his own make of the American device for clipping queens' wings, exhibited at the B.B.K.A. conversazione held in March last, and reported on in our issue of the 30th of that month; also a queen-cage and queen-cell protector, all of which are exceedingly well made, and, in our opinion, better suited for the purpose than many of the larger cages generally used. Mr. M. informs us that the wing-clipping device is appreciated by experts,

who have tried it, more particularly as a queen-catcher; being so springy it is much safer in catching a queen than the usual thumb and finger method even in the hands of experts. Queens may be caught and transferred safely to wherever wanted without handling at all; or they may be made to run into the cage in the same manner ready for introduction to an alien stock. The cage is arranged to fasten on the comb in a simple manner, and the queen may be liberated without any disturbance.

In explanation of the accompanying "cut" of the several appliances, we may say the top figure shows the queen-cell protector fixed on comb; the queen-cage is seen just below the first-named item, also fixed on comb, while the lowest and largest figure illustrates the queen-clipping device, with its plug-shaped "follower" seen on the right.

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING MAY 20, 1899.

1899.	Bar. in.	Tem. 9am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
May 14....	29·61	54·0	62	47	15	54·1	·15
,, 15....	29·40	49·0	58	48	10	52·7	·16
,, 16....	29·50	50·0	61	44	17	52·0	·10
,, 17....	29·60	49·0	60	47	13	53·1	—
,, 18....	29·84	58·0	69	48	21	57·9	—
,, 19....	29·95	57·1	61	42	19	50·9	·13
,, 20 ...	29·64	58·5	63	51	12	56·6	·38
Means	29·65	53·7	62·0	46·7	15·3	53·9	·92*

* Total, ·92 in.

Mean vapour tension, 0·307 in.; mean relative humidity, 74 per cent.; mean temp. of the dew point, 45°·3. The rainfall, viz., ·92 in., =20,813·16 gallons, or 92·92 tons to the acre, or 4·60 lb. to the square foot. The rainfall on the 20th, viz., ·38 in., = 8,596·74 gallons, or 38·38 tons to the acre, or 1·90 lb. to the square foot. For the week ending May 13, the mean temp., viz., 50°·0, (not 50°·1 as sent in error), was −0°·5, and the rainfall, viz., ·59 in., −·14 in. The mean temp., April 30—May 13, viz., 47°·4, is −2°·5, and the rainfall, viz., 60 in., −·25 in. The mean temp., Jan. 1—May 13, viz., 42°·3, is +0°·6, and the rainfall, viz., 7·27 in., − ·28 in. A thunderstorm, accompanied by torrential rain, which lasted about ten minutes, passed over the village at 1.40 p.m. on the 20th. At Collyweston village, distant about one and a half miles N.E., an old walnut tree was ignited by lightning, at about 1.50 p.m. on the 20th, and was still smoking at 6.15 p.m.

FRED. COVENTRY.

Duddington, Stamford, May 22.

TRADE CATALOGUES RECEIVED.

CHAS. REDSHAW, *The Apiary, South Wigston, nr. Leicester.*—In sending on his catalogue for 1899, Mr. Redshaw requests us to say that in order to pay greater attention to the bee and poultry-appliance making trade he has given up his branch establishment in the fancy goods line, and will now devote all his time to the manufacture of hives, bee and poultry houses, greenhouses, &c., turning out as before only the best goods at lowest remunerative rates. The list before us is very full and complete; no article of real use in the apiary being omitted. We see included the light corrugated iron sheets ready for screwing on to leaky hive-roofs suggested in our pages recently.

F. SLADEN, *Ripple Court Apiary, nr. Dover.*—Mr. Sladen's catalogue for 1899 is—as its title states—simply a "circular of prices current for bee-keepers' supplies." Compact and well-arranged in description, its ten pages contain terse and well-written descriptions of all requirements for bee-keepers' use, besides several specialities not found in other catalogues. Among the latter are entomological specimens of *apis dorsata* and other wild bees, on which subject Mr. Sladen is a skilled expert. We also note a short list of useful bee flowers and plants in small packets, with prices for them.

E. W. GODDARD & CO, *Wash-road, Newbury, Berks.*—In Mr. Goddard's small, but neat and complete list are described some half-dozen hives of different styles, three of them being illustrated, and all distinguished by the maker's name. A special invitation is given to intending purchasers to inspect the hives recommended in actual use at the apiary of the dealer. This is a good idea, as affording a chance of judging and comparing with other types of hive.

A. W. HARRISON, *Potters Bar, Middlesex.*—The list sent out for present season by Mr. Harrison is abridged from his larger catalogue. A strong point, we are pleased to note, in the catalogue before us, is made of employing "best red pine only" in the manufacture of all hives, the common white spruce so often used being entirely discarded.

EDMONDSON BROS., 10, *Dame-street, Dublin.*—Messrs. Edmondson, while specially catering for Irish bee-keepers, invite customers from this side the Channel, in sending out a well got-up list of bee-goods of the make approved of in Ireland. Among these we note the hive approved by the Congested Districts Board for the use of small farmers and others in certain parts of Ireland. They also make a speciality of manufacturing straw skeps for wholesale purchasers at low rates.

HARDHAM APIARY, *Pulborough, Sussex.*—A small list of twenty pages in which—while enumerating hives and appliances—special prominence is given to the queen-rearing and bee department. The apiary—of which a view is given—consists of about 120 hives, and from

these stocks nuclei and swarms are promptly sent out during the season at stated prices. Letters to be addressed to the Manager, as above.

T. HOLLIDAY, *Astbury, Congleton.*—Mr. Holliday's specialities for the use of bee-keepers being only two in number, viz., "Bee-Smoke Cartridges" and Carboline Pomade as a "perfect remedy for bee-stings," as well as a preventive, he has no need for a catalogue, and sends, instead, samples. We have tried the "Cartridge," and find it effectually does away with the "going out" nuisance. Regarding the "anti-sting," Mr. H. asks us to "get stung, then apply it." This is, of course, a fair plan of testing the efficacy of a sting remedy. We fear, however, our being so altogether "case-hardened" against bee-stings as to form a bad subject for trial, so we leave it to more susceptible bee-keepers.

Bee Shows to Come.

June 5 to 8 at Windsor.—Bee and Honey Show in connection with the Royal Counties Agricultural Society. Several classes for past season's honey. Schedules from A. D. Woodley, Hon. Sec. Berks B.K.A., 17, Market-place, Reading. **Entries closed.**

June 9 and 10 at Epping.—Show of Bees, Honey, and Appliances in connection with the Essex Agricultural Society. Schedules from Mr. G. F. Offlahertie, Monghyr Cottage, Loughton, Essex. **Entries closed.**

June 19 to 23 at Maidstone.—"Royal" Agricultural Society's Show. Bee and Honey Section under management of the B.B.K.A.

June 30 at St. Ives.—Hunts B.K.A. annual show of honey, hives, &c. Open classes. Schedules from C. N. White, St. Neots.

July 13 and 14 at Louth.—Honey, Hives, and Bee Appliances in connection with the Lincolnshire Agricultural Society. Bee Department under the management of the Lincolnshire B.K.A. Schedules from R. Godson, Hon. Sec. Lincolnshire B.K.A., Tothill, Alford. **Entries close June 13.**

July 21 and 22, at Knowle.—The annual exhibition of the Bristol, Somersetshire, and South Gloucestershire B.K.A. will be held in connection with the local Horticultural Society's show. Schedules from Miss H. Dawe, Long Ashton, near Bristol. **Entries close July 15.**

August 3 at Loughton, Essex.—Honey Show in connection with the Loughton Horticultural Society Annual Exhibition. Four classes for honey open to County of Essex. Entry fee, 6d. Schedules from C. E. Skinner, Hon. Secretary, Loughton. **Entries close July 29.**

August 7 at Beddington Park, near Croydon.—Surrey B.K.A. Annual Show, in connection with the Beddington, Carshalton, and Wallington Horticultural Society. Increased prizes. Five Open Classes, including single 1-lb. jar and section, with free entry. Schedules from F. B. White, Hon Sec., Marden House, Redhill. **Entries close July 30.**

August 16 and 17 in St. John's Schoolroom, Blackpool.—Annual Show of the Blackpool and Fylde Horticultural Society. Exhibition of honey under the auspices of the Lancs B.K.A. Open classes for twelve 1-lb. sections and twelve 1-lb. jars extracted honey, with prizes of 20s., 10s., and 5s. for each. Schedules from R. Atken, Sec., 17, Devonshire-road, Blackpool. **Entries close August 7.**

August 29 at Northwich.—Cheshire B.K.A. Show, in connection with the Cheshire Agricultural Society. Open classes for honey, wax, and single hives. Schedules (shortly) from Mr. T. A. Beckett, St. Werburgh's Chambers, Chester.

September 6 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 30.**

Notices to Correspondents & Inquirers.

INQUIRER (Renfrew, N.B.)—*Extracting Honey from Brood-nest.*—1. Unless under exceptional conditions it is bad bee-keeping to extract from combs of brood-nest at all. One such "condition" is when the outer combs are so clogged with stores as to render them useless for breeding purposes; but even in this case it is better to remove stored combs and replace them with full sheets of foundation, unless certain that the "stores" are honey and not syrup. 2. On the other hand, if query refers to extracting honey of current season from outside combs, we say "don't."

"WEVA" (Enniskillen).—*Bees Cast Out of Hive.—Post mortem* reveals no organic disease in bees sent. We could not judge as to them being "very black looking," as the few bees in box appeared as if soaked in syrup. Had the black colour been traceable to absence of pubescence or hairyness on the body of bees, we should set them down as robbers cast out after being stung by the bees of hive being robbed.

H. FISHER (Brighton).—*Suspected Combs.*—1. It is not at all usual to find either eggs or larvæ in the outside combs of brood-nest at beginning of May. 2 Since you write of the bees as "strong and working vigorously," we think there is no cause for alarm at the suspicious substance you note in the cells, but, in any case, we must have an inch or so of the suspected comb for personal inspection before giving any authoritative answer on the point. Descriptions of cell contents by inexperienced bee-keepers we find altogether too uncertain to be reliable.

NOVICE (Leicester).—*Giving Room in Hives.* 1. If the hive had brood in the whole ten frames on the 11th inst. (which we take leave to doubt) there is no need whatever for transferring to a larger hive to prevent swarming, as your friend advises. Give the bees more room in the hive they already occupy by placing a queen-excluder over top of frame, and on this set a box of shallow frames fitted with comb foundation. 2. The best book on bee-keeping we can advise is the "Guide Book," price 1s. 8d., post free, from this office.

Mr. M. LEA (S. Hampstead) writes with reference to the Isle of Wight and Sussex for bee-farming (as mentioned by "Torfrida" on page 170):—At Blackgang, Isle of Wight, not many bees are kept, but there is an abundance of heather, hawthorn, and other good bee-pasture. The place is also from 300 ft. to 500 ft. above sea-level. In Sussex, between Hastings and Eastbourne.

G. WATSON (Dublin.)—*Bee Nomenclature.*—The bee sent belongs to the Andrena family *vide* Mr. Sladen's papers on "Our Wild Bees," p. 95, of B.B.J. for March 10, 1898.

*** *Several Queries are held over till next week.*

Editorial, Notices, &c.

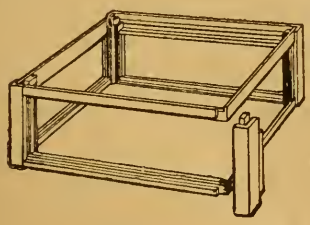
SURPLUS CHAMBERS.

FOR COMB-HONEY.

In pursuance of the intimation made on page 199 last week, that, under certain conditions, some particulars would be given in this issue regarding the construction and working of surplus chambers for comb-honey, we now—in compliance with several requests—enter more fully into the matter, so far as the super referred to.

The glazed box for comb-honey—termed in former days a super—was described in this journal in 1875 (page 163) as "Lee's Crystal Palace Prize Super," by its then editor, Mr. C. N. Abbott, who says:—"This article rightly took the prize for 'the cheapest and best super for general use in an apiary.' Its construction," he further adds, "is a marvel of ingenuity." He then goes on to say, "It is composed of two square frames and four ingeniously constructed pillars, each of which is a study in itself; one of the frames is laid upon a table, with the rabbeted side upward and a pillar is pressed on to each corner, the glass sides then slid into the groves in the pillars and the rabbets in the bottom frame; the top frame is then pressed on to the pillars, and the super is ready to receive the comb bars, in fact, is practically complete."

The original illustrations which accompanied the description are not now in existence, but the "cut" here shown



gives a fair idea of the box (minus top-bars) when put together. In size it covers the same number of frames as a shallow-frame box or an ordinary rack of sections, but the super is only 4 in. deep, and is fitted with seven comb-bars 1½ in. wide. When in position on the hive an "adapter" of thin board—having two long slots ½ in. wide in it to admit the bees—is placed under the super.

In working the super over twenty years ago, the methods followed were somewhat different from those of to-day, but in this case one appliance, now almost obsolete, is indispensable, viz., the "adapter-board." This is a thin board (on which the super stands) with a long slot on each side to admit the bees. Its use is, first, to prevent discolouration of the lower edges of combs from the emanations of brood-nest, and, second, to minimise the risk of comb-attachments between the upper and lower chambers. The beauty of these supers largely consists in the combs being filled, sealed, and nicely "rounded" off on their lower edges with no breaking of the cell-cappings. The super is meant to be looked at when reversed, or turned over, and covered with a sheet of glass. Hence the need of showing all the seven combs—each 2 in. thick—with lower edges unbroken and as perfect as possible.

Our own plan of producing these supers of comb was to work them as a second story above brood-nests, the first being a box of shallow-frames. The object of this was to get the earlier and darker honey from fruit trees, sycamores, &c., stored next the brood-chamber, and by the time the shallow-frames were filled, honey from white clover was coming in; consequently, these glazed boxes of honey-comb had such a (shall we say) "superior" look, that purchasers were tempted to take a whole box, and they "sold well at 30s. apiece," as stated on page 199. We have only now to add that if our readers will make a trial, this season, of one or two of these supers, we venture to say they will not regret doing so. The original maker, Mr. Jas. Lee, being, we are glad to say, still to the fore at 5, Holborn-place, W.C., application to him will no doubt procure "Lee's Crystal Palace prize supers" in exactly the same form as when he supplied us five-and-twenty years ago.

FOUL-BROOD GERMS.

DIFFERENCE BETWEEN SPORES AND BACILLI.

Our senior Editor, who, as readers are aware, is now in America—having been referred to in the recent correspondence in *Gleanings* regarding foul brood germs—was, we believe, invited to contribute an article on the subject to our

American contemporary, and his contribution reads as follows :—

I have read the correspondence respecting the destruction of foul-brood germs contained in honey, by means of boiling, and it appears to me that, when giving advice with respect to such a destructive enemy as foul brood, we cannot be too cautious, and had better err on the side of safety than the reverse.

From the promiscuous manner in which many talk about microbes, bacilli, spores, or germs, it is quite evident that they do not realise that a very great difference exists between them ; and conditions that will be destructive of the one may not have the slightest effect on the others. In respect to the particular organism with which we have to deal in foul brood ; viz , *Bacillus alvei*, we have to contend with it in two different forms and stages of life, in one of which the vitality of the organism is easily destroyed ; while in the other the same organism, but under a different form, is capable of retaining life, and germinating into the condition of the previous stage, even after what would appear the most damaging influences, such as long lapse of time, drying, heat, cold, and chemical reagents. The bacillus condition is the first stage of active life of this organism ; and it remains in this state, splitting and multiplying as long as it has nutrient material to live upon and other conditions are favourable. A bacillus is rod-shaped, and when, in process of time, it has attained full growth, it splits in two, each of these taking up an independent existence, and going through the same process ; and as it has been shown that as many as two generations can be raised within an hour, and as the same rate of progression can be kept up by each individual in suitable nutrient media it is not astonishing that foul brood spreads rapidly.

Now, while in this bacillus stage it is not difficult to kill the organism (a temperature under 160 deg. F. will do it), and there are a number of chemical reagents which even in great dilution will destroy bacilli. It is, however, very different in the subsequent stage of existence of this microbe. When the bacilli, or rods, have multiplied to such an extent as to exhaust all the nutriment upon which they were feeding, or come in contact with surroundings inimical to their active existence, the rods gradually turn into spores. At a certain point of the rod a bright speck appears, which gradually enlarges at the expense of the protoplasm in the rod, until in its fully developed state it assumes an oval shape. The sheath swells, and the bacillus looks much thickened; then the sheath breaks and the spore becomes free. Now, it is when the rods have become spores that the danger arises, because it is very difficult to make many understand the great difference between them and bacilli. They are analogous to seeds of plants, although they differ from these in possessing greater vitality. Spores retain the power to germinate into bacilli after the lapse of long periods ; and Dr. Klein, one of our great authorities, says, " There is no reason to assume that these periods have any limit." We have, at any rate, had ample evidence in our own experience to show that spores have retained their vitality for many years. These spores are not only capable of germinating into bacilli after a long period of time, but will endure heat, cold, drying, and chemical reagents—influences that would be destructive to bacilli themselves. The temperature of boiling water does not destroy them unless considerably prolonged, although a very much lower temperature, as I have already stated, will kill bacilli. If we had to do with bacilli only, in every case bringing up the temperature to 212 deg. F. would be amply sufficient ; but with spores it is different. A few minutes' boiling will destroy some, because all the spores have not the same degree of vitality ; and in this they resemble seeds of plants. It is well known that some seeds will germinate much sooner than others, and some will not germinate at all. Experiment has shown that, to destroy all the spores, prolonged boiling is necessary, or they must be subjected to a higher temperature, such as is obtained from steam under pressure. Spores are unable to withstand steam, even for a few minutes, at a temperature of 212 deg. F. ; but this could not be applied to honey, as the spores would have to be separated before they could be acted upon by the steam. I have had frequent demonstrations that many do not really understand what boiling, from a scientist's point of view, is, and that is why the results are frequently so different. They are content to think that the liquid is boiling if they see it bubbling, whereas the bulk of it may be several degrees below the boiling-point if stirred and thoroughly mixed, and, of course, the larger the quantity the longer it takes to raise the whole mass to the boiling temperature. Experience has shown that it is not safe in every case to depend upon ten or fifteen minutes' boiling. Several boilings would be better, but not so convenient to the ordinary bee-keeper. The rationale of this is that, at the first boiling, all the developed bacilli are destroyed ; then suppose a nutrient medium and other favourable conditions to exist in the honey, the unaffected spores would germinate into bacilli, and could be destroyed in the next boiling. A third and even a fourth boiling might be necessary to destroy the remainder. Failing this method of procedure, it is safer, with our present knowledge of the behaviour of spores, and taking into consideration the appliances at the command of the average bee-keeper, to insist on prolonged boiling.—THOS. W. COWAN, *Loomis, California, April* 18, 1899.

[We deem it right to say that Mr. Cowan's consent has not been asked for reprinting the above in these pages, as it would have taken several weeks' time to obtain it. In view, however, of the importance of the subject we

do not doubt of having his approval of its appearance in his own journal.—THE JUNIOR EDITOR B.B.J.].

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondent are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

Communications relating to the literary departmen', reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to "The EDITORS of the 'British Bee Journal,' 17, *King William street, Strand, London, W.C.*" *All business communications relating to Advertisements, &c., must be addressed to* "THE MANAGER, 'British Bee Journal' *Office*, 17, *King William-street, Strand, London, W.C.*"

*** *In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

ABNORMAL EGG LAYING.

NORMAL PROPENSITIES OF CERTAIN QUEENS.

[3695.] The experience of your correspondent "Military Bee," as recorded in B.B.J. of May 25 (page 202), is of great interest, inasmuch as it shows that, in the case of queens, exceptional circumstances bring about an abnormal state of affairs, the why and wherefore of which seem unexplainable, except in their direct bearing upon such cases as the one in point—viz., "failing" queens. But in the case of strong, healthy, fertile, and young queens, these abnormal circumstances raise a difficulty in one's mind as to how a queen can fall into such errors as to lay eggs at random; At first sight there seems to be no difficulty, and to many readers of your journal the raising of such questions may seem absurd; but can any reader tell me how it is that a normal queen in her own hive lays eggs at random, as has been witnessed, whilst directly before and, perhaps, after, she has been laying quite regularly? The question, a very simple one, is not so easily answered—satisfactorily. That the queen has been disturbed and that, therefore, an abnormal state of things has taken place is not sufficient answer. For has not the mother bee full control over her laying powers, and, therefore, need not lay unless she has some reason for so doing?

I make these remarks by way of an introduction to a very unusual observation. I was fortunate enough to have been able to witness a day or two ago at my experimental apiary here. Whilst examining one of my stocks from the outside, and having simply lowered the board at the back (these German hives, as I have found out to my cost, open in this way and not as ours from the top, the frames run in grooves, and to get at the end frame all the preceding ones have to be taken out. I discovered that the queen (a hybrid, hatched and mated in August last) was laying in the very outside frame, and, watching her movements, without disturbing her in any way, I witnessed her lay an egg whilst walking at the edge of the comb, which quite accidentally, no doubt, fell a short way into a cell, remaining attached to the side for the space of about half a minute, during which time the queen had disappeared. I continued to watch with intense interest, and was delighted to see what I had before prophesied in such cases come true—a worker following in her train adjusted the egg into its rightful position.

This kind of thing may have been observed before, though I cannot recall any such case to memory, but it at once suggests another question of more importance, and one which, though often asked and considered, has never been satisfactorily answered, viz.—Do workers at will carry eggs and deposit them again in their prescribed cells under "normal conditions"? After what I have seen I should decidedly lean towards an affirmative reply.

Workers are said to carry fertile eggs and deposit them into empty queen cells—and Mr. Dickel says, though I, myself, personally do not believe it, that they convey fertile and unfertile eggs to worker or drone cells at will; but then, under all these conditions, we must bear in mind that they are "abnormal."

There can be no doubt whatever that there are large fields open, and, as yet, unexplored, subjects of which we know but very little at the best. But whatever ground we explore, be it new or old, we must not despair at the "trip," nor shall we generally find "new matter" or answers to our questions where we should expect, but often in the most unexpected places and in the most unexpected ways.

These questions seem, at first sight, to answer themselves, though I am inclined to think this is not so, but, as said before, a field for reflection and study.

May I crave the Editor's leniency with me in my stupidity?—R. HAMLYN HARRIS, F.Z.S., F.E.S., &c., *Zoological Institute, Tübingen University, Germany, May* 28.

BEE PARASITES IN SOUTH AFRICA.

[3696.] I was interested to see in the BEE JOURNAL of March 30, just to hand, a portrait of an old friend, the little red crab.

It is very common here, and it shows how necessary it is to send anything that one finds for identification, as I had no idea it was at all unknown, thinking, at first, like your correspondent, Mr. Wells (3624, p. 126), it was *Braula cœca*, but we have that, too.

Your specimen has evidently faded after death (as they generally do), for they are a very bright scarlet when alive, and, when a

hive is opened, run about waving their claws in the air in a threatening attitude, just like a crab. I have never found more than about half a dozen ; nor do they appear to do any harm, and from the fact that they generally seem to prefer old hives that have been somewhat neglected, and nests in houses or trees, it appears likely that they are scavengers.

They are evidently related to a large number of spiders very common here with crab-like claws, some being very large, and are credited with a very poisonous bite ; many do not build a web, but jump from ambush at their prey, seizing it with their claws, and being bright green easily conceal themselves among the leaves.

Spiders are one of the worst enemies the bees have in these parts ; they are also a danger to the bee-keeper, as they are very fond of getting under the roofs, and their bite is often poisonous.

The buckweed I wrote about some time ago is in flower again in small quantities, so I am sending a specimen enclosed. There will not, however, be enough to affect the honey flow.

I shall, in common with your readers generally, much miss the contributions of "Lordswood" ; to me they always brought up memories of the fields and lanes of the old country that I have not seen for twenty years.

With best wishes for the coming honey harvest.—A. C. Sewell, *Durban, Natal, April* 24.

AN "EXPERT" EXPERIENCE.

[3697.] Since I got my certificate in '97 I have been doing a bit of bee-work amongst my own and some neighbours' bees and have had rather a busy time. The other evening I was sent for to attend to some bees, super them, &c. When I got there the owner (a lady) told me she had a swarm last year from her one stock, but she was afraid they had been starved, as the bees were all dead ! "Would I look at the hive and explain the cause of them dying." I did look, and there was not a particle of food in the hive and not many dead bees either. But I noticed that the swarm had evidently been hived on old frames with old combs, such as I send you a sample of for your opinion, as I had an idea it was foul brood. The combs given to the swarm were some that a stock of bees died in some years ago. If comb is healthy, I have erred on the careful side, which is always safest where doubt exists. I showed the comb to a friend (who is also a certificated expert) and we both thought it would be best to send it to you, as being, we know, willing and glad to give advice to young "experts."—H. A., *Hereford, May* 26.

[The comb sent is affected with foul brood of old standing. We are always pleased to hear of "young experts" being cautious in these matters, and heartily wish that all experts(?) would err on "the safe side" when they err at all, as they certainly do at times.—Eds.]

JUNE WORK ABOUT HIVE STANDS.

[3698.] The month of June is a busy time in both the apiary and the garden, and many little jobs that are not done now will, likely enough, remain undone all the summer. If the hives are on grass, this should now be well mown or clipped with a good pair of sharp shears. Care must, however, be taken not to touch the hive or its stand while operating, or the remainder of the work may only be got through with difficulty, and perhaps some stings in addition. This is one of the little jobs that, if the bee-keeper cannot do it himself, some one used to bee-work should be employed to do. When using tools near hives don't work them too close, for one tap or rough jolt will readily upset the bees. Let the grass growing close to hive legs or stands be carefully cut away therefrom with a sharp pocket knife, and weeds pulled up by hand, if the ground about the hives has to be hoed. Late evening and very early morning are the times to do gardening and cleaning up in the apiary. But if grass or weeds receive attention now they will not require it again until the busiest part of the season is over.

All kinds of greens for autumn and winter use should be planted as soon as possible. Also plants of vegetable marrow and pumpkin. Cuttings of all kinds of herbs may still be taken, and will root freely, either in showery weather or with artificial shade and moisture. Thyme and horehound are very useful bee plants, thyme especially so. I have a row of thyme 35 ft. long. This is quite a picture at the present time, being covered with its tiny mauve flowers.—Wm. Loveday, *Hatfield Heath.*

SELLING DARK HONEY.

[3699.] My communication in B.J. of the 6th ult. (3631, p. 134) seems to have offended your correspondent, "E. O. B," who charges me in last week's B.J. (3694, p. 204) with *boasting* of putting honey of a bad colour in earthenware jars with the intention of deceiving the public. That would be serious if true, but it is not. The honey referred to would not, I admit, have been put in those jars if it had been of a good colour, but there was no intention on my part of deceiving any one. I imagine my customers knew perfectly well that the honey was of poor colour, because they were informed of the fact by myself, nor have I received a single complaint from buyers, though I have been told what beautiful honey it was.

"E. O. B." agrees, too, with the Editor's remark that it is hardly "great fun" when our neighbours are stung ! No, I should think not ; I have moved my bees *twice* to avoid it. But then I never said it was. I do hope our Editors will not be offended if I point out that my letter must have been misunderstood by them, instead of "great fun" it should have read "very funuy."

Permit me to say that I had but one object

in view in writing my experiences to the B.B.J., and that was to contribute my share to the readable articles in that paper. I have sometimes felt inclined to carp and criticise (that is very easy), but have stayed my hand, and I now advise "E. O. B." to sit down and write his experiences. Perhaps, like myself, he is but an indifferent scribe, but in spite of that, if he writes down events as they actually occurred, his experiences (even in such a small matter as selling honey) may help some struggling brother or sister bee-keeper.—SAINFOIN, *St. Albans, May* 27.

SECTIONS AND SWARMS IN MAY.

[3700.] Having seen no note of any early swarm in BEE JOURNAL, it may interest some readers that Mr. Ashby, of Court Lodge, in this parish, had a fine swarm on May 11.

I also took four finished sections from a hive at Joyce Hall on the 18th inst., and two hives swarmed the same day, the swarms joining and settling on a currant bush. When I hived them there was a half bushel of bees; in fact, the largest lot of bees I ever saw. Honey was coming in fast from the fruit blossom, but the bees were sadly hampered by the heavy winds we were having at the time.—ELVEY E. SMITH, *Southfleet, near Gravesend.*

CELLULOID QUILTS

AND QUEEN EXCLUDERS.

[3701.] I should like all who have so far appreciated celluloid to join me in *heartily* thanking our friend, Mr. Reid, for introducing the same; for, despite adverse criticisms, I believe it has come to stay and benefit the craft to a greater extent than can yet be realised. We are punching it for excluders and other things and see no danger, but find it beautiful to work. Mr. Reid can claim credit for adding great interest in a material that will prove a benefit to hundreds and for such work he does, I am sure, from what we know of him, feel sufficient satisfaction to compensate more than money can do. Mr. Reid is one of the few men who works to benefit, not, as most of present-day workers work, for *pay* only. Assuring him of my grateful thanks for celluloid and other matters he gave us at the late annual meeting.—W. P. MEADOWS, *Syston, May* 26.

[3702.] Referring to my communication on this subject in B.J. of May 18 (page 194) and the subsequent letters of last week, I had no wish to stop the use of celluloid (as I have a stock for sale, that would be unfortunate), but merely to give a note of warning, which our friends should take for what it is worth, and in the same kindly spirit as it was meant to be. I agree thoroughly that it is a "great convenience" to see the work of our busy helpers, and do not wish to minimise the advantage of the celluloid excluder, but trust presently the material may come down in price so as to bring these articles more easily within the reach of every bee-keeper.—GEORGE ROSE, *Liverpool, May* 29.

A BEE-SHOW IN SOUTH AFRICA.

[3703.] Since my last letter our big show has come and gone, and I thought perhaps a short account of it would interest B.J. readers. This show, which is held here, at Port Elizabeth, is the premier show of South Africa, the Government supporting it on the "pound for pound" principle; that is, for every pound the Society gives the Government grants the same amount.

In the honey department there were some liberal prizes given, for twelve 1-lb jars honey, first prize £2, second prize £1; the same for twelve jars candied honey. Then came 14 lb. comb-honey in frames, £3 and £2; 14 lb. in sections, £2 and £1; 10 lb. beeswax, £1 and 10s. The prizes for appliances were £2 and £1 respectively. The wording of the schedule was somewhat puzzling in this class, and read as follows:—"The best exhibit of bar-frame bee-hive, not less than five of same pattern, known as observatory hive." I saw the secretary and explained what an observatory was, at same time declaring that I did not think any bee-keeper in South Africa possessed five of this kind of hive, so he told me to send what I thought would be most interesting. So I sent a collection of appliances, and was awarded first prize, and second for wax.

We have had a very long drought in this part lately, and having disposed of the early crop of honey which I exhibited at Uitenhague show, I had none to put up for this later one; but there was a fair show of honey staged. The sections, however, were not nicely filled, and there is plenty room for improvement in all of the classes. We have imported some poultry and ducks from St. Mary Cray, Kent, for which we were awarded first in four classes. Altogether I put up sixteen exhibits, and was successful in fourteen, the prize money being £19 15s. I notice that the prizes at the Johannesburg show are more liberal than our show, the prizes offered in some classes amounting to ten pounds.

My last letter in B.B.J. has been the means by which I have made several acquaintances. One was from Mr. Lovell, of Durban; another was a Scotchman at this place, a former secretary of a Scotch association. So I was pleased to find there was a sort of Freemasonry attached to us bee-keepers out here. I have also enclosed one letter from France—from M. Vallet, the foreign translator of publications for the French B.K.A.—asking for permission to translate my

last letter in your pages for the French association. As I am not aware what your rules are in journalism, you must please forgive me if I did wrong, but my answer was if he thought it would interest his countrymen, as far as I was concerned he was at liberty to do so. I see by the last JOURNAL some one has sent you the *Braula cœca* we have out here. I saw at once it was quite different from the one we have at home. This one is found just under the quilt, and differs altogether in its manner of attaching itself to the bees; catching the bee by the leg. The one at home I have found very prevalent in some districts. I have taken as many as five from a queen's head; the said queen appearing to be very much irritated, and constantly trying to dislodge them by putting her foot over her head. We have many more enemies of the bees, and much worse than the above, out here. One is a small fly, which carries the bees off by the hundred. I will send you a specimen of this insect in my next letter on the enemies of bees out here. I shall have some of these flies sent to the Government Entomologist for information as to their habits, and where they secrete themselves, as I have no doubt their homes are a perfect charnel house for the poor bees.

I was very sorry as well as the rest of your readers to hear of the death of Mr. Sands, the "Lordswood" of your JOURNAL. Many times I have wished we could have had a pen like his to describe the bee flora of this country, which is so very little known. The friends of "Lordswood" will have the consolation of knowing that his memory will be cherished in the years that are to come by all who read his articles. May his mantle fall on some of those that are left!

I must thank Mr. Loveday for his kindly reference to me (3595, p. 67), and in reference to the English bees I brought out here. I am, however, sorry to say I have been very unsuccessful with them. They arrived in first-class condition, but did not make much headway. I had to leave them at Sundays River when I was settled here. I went after them only to find that one lot had been destroyed by the big red ant, and the other only had a few bees left, wax-moth having eaten the comb and spun a large web of cocoons. This moth was described by some one in your JOURNAL lately, so I need only say it is ten times worse than the English moth. The few bees left I brought back here and tried to increase by feeding and giving fresh brood, with the result that one day they followed the African bees' example and left the hive. I have never seen them since.—T. MARTIN, *Bog Farm, Walmer, Port Elizabeth, S.A., April* 30, 1899.

EARLIEST FLOWERING PLANTS.

"THE EARLY BIRD" AND EARLY BEE.

[3704.] Referring to my contribution in the B.J. for April 20 (3645, p. 152), I send the following translation from *Ciel et Terre* in Symons's *Meteorological Magazine* for August, 1890, p. 98:—"Phenological observations (translated from *Ciel et Terre*). The utility of these observations as an auxiliary to the study of climates has long been recognised.

"In five years a phenological observer may have obtained mean dates sufficiently accurate to enable him to judge of the successive advent of the various phases of vegetation. If one has ascertained the mean date for five years of the principal phenomena, *e.g.*, when in the immediate neighbourhood of the observer the first blooms of the blackthorn open, or the first fields of barley are cut, one is in a position to decide: 1. How the station is related to one of which the averages have already been long determined; 2. How various localities are related to the principal station, whether they are colder or hotter, as indicated by the relative maturity of plants in the two localities; one obtains these results much better than if one had established and compared hundreds of thermometers and other gauges in a hundred different positions, putting aside the impossibility of observing them all, and the difficulty of procuring and erecting them; phenological observations cost nothing, while metereological instruments are expensive; 3. Each year, and each week of the year, one can compare the observations of the progress of vegetation with the means, and ascertain whether at one's own station the season is early, normal, or late. Phenology is a species of thermometry which may even occasionally correct erroneous conclusions from thermometric records. Thus, Hoffman has remarked that it is a peculiarity of oak brushwood to leaf much later than full-grown trees of the species, although, if considered from the thermometric standpoint only, one would be inclined to attribute it to the dampness and consequent coldness of the positions occupied by the brushwood. A plant is, in fact, a sort of registering thermometer, which, like the thermometer, shows us present temperature, but in addition the final effect of past temperatures, a result we can arrive at only imperfectly by summing up the daily mean temperatures. Phenological observations—with figures founded on comparisons, have the advantage of presenting to the mind facts easily grasped. As regards biological problems, isotherms are not necessary, because they do not give the real average temperature. That is why isotherms cannot coincide with isophanes (lines of equal phases of vegetation). Accurate observations of the phases of vegetation, and the determination of their mean value, furnish important indications as to the further progress of the plant, by the differences which they present from the normal value. But it has another result. By comparing during a year the flowering of certain plants in different places in a district we may be able to determine the amount of heat received in each of these positions in a given

time. The phenological observations enable us to examine predictions which have come down to us from remote ages, such as the speedy arrival of winter, after the fall of the bloom of the heath and the larch losing its leaves. Hoffman has observed that out of twenty-nine years, in twenty-one the early or late opening of the buds of the chestnut has corresponded with a following winter warm or cold. In fact, phenology may attain the same precision as meteorology, for the two modes of observation can each give only approximate values."—FRED. COVENTRY, *Duddington, Stamford.*

HUNTS BEEKEEPERS' ASSOCIATION.

ANNUAL MEETING.

The annual general meeting of the Hunts Beekeepers' Association was held on Saturday at the Fountain Hotel, Huntingdon. Sir A. W. Marshall (Chairman) presided over a fair attendance, including Messrs. J. Howard, W. H. Woods, E. Allen, R. Brown, J. H. King, W. Woods, A. Sharp, J. Osborne, S. Watts, and the hon. sec., Mr. C. N. White.

Mr. Howard, in reporting upon the inspection he had made in North Hunts during the year, said he had visited most of the villages in the northern part of the county, and found that in every place called at the people were well disposed towards keeping bees.

Mr. White also reported upon his visits in the south of the county as being very favourable, stocks having been greatly improved.

Mr. Sharp then referred to the question of selling members' honey, and in the course of his remarks said that the committee which was appointed to consider this matter met in April. Several schemes were brought forward and discussed, but no definite plan was resolved upon. Speaking for himself, Mr. Sharp said for some years past he had been in the habit of selling the whole of the produce of several large honey producers, along with his own, and he had a constantly increasing market. That being so, the committee thought it might be well for members who could not sell their honey to forward the same to him for sale and pay a small commission for his trouble. To such a course he would readily agree if the quality of the honey could be absolutely relied upon, which would not always be the case.

Mr. White, in presenting his seventeenth annual report, said he had pleasure in drawing attention to the better financial position in which the Association now stood, a result mainly due to extra work in a hitherto neglected part of the county. After referring to the disappointing season of '98, the report went on to say: The work of giving technical instruction in bee-keeping had, during the past year, taken a new form. Instead of lectures, to which, in many instances, few people came, bee-keepeers had been visited at their homes. The hives were examined, and while causes of failure were pointed out, assistance and advice was given just when and where it was needed. This was a work that might be continued, at any rate, until foul brood had been eradicated. It was very gratify to be able to report that the disease was certainly less prevalent, and this he attributed to a better knowledge of the deadly devastating effect of the disease when once established, and to the greater willingness of bee-keepers to accept expert advice and assistance. The statement of accounts and report was adopted.

The President, the Earl of Sandwich, and the Vice-Presidents were re-elected. The Committee were re-elected as follows:—E. Allen, B. Bull, R. Brown, J. Osborne, Z. Hobbs, J. Howard, J. Linton, J. H. Howland, A. Sharp, F. B. Thackray, W. H. Woods, S. Watts, with Sir Arthur W. Marshall as Chairman.

Mr. C. N. White was unanimously re-elected Hon. Sec. along with Mr. Allen Sharp as Assistant Sec.; and Messrs. J. H. Howard, R. Brown, W. H. Woods, and S. Watts as Local Secs. Messrs. Howard and White were also appointed foul-brood inspectors.

Messrs. J. Howard and J. H. Howland were elected as the representatives to British Bee-keepers' Association's quarterly meetings.

The Secretary said they had received a grant of £20 for technical work from the County Council, and this led to a discussion as to the best means of expending this sum in the promotion of the objects aimed at.

A vote of thanks to the Chairman for presiding terminated the proceedings.

Queries and Replies.

[2210.] Can you tell me the name of the enclosed insect? I found it carrying off a dead bee from hive entrance to-day. Would it be injurious to the bees in any way.—J. W. COOPER, *Newport, Isle of Wight, May* 22.

REPLY.—Our esteemed contributor Mr. Sladen, to whom we forwarded the insect, writes as follows:—The insect received this morning is a beetle belonging to the section Brachelytra. Its nature is to feed on carrion. It would not attack a live bee or enter the bee-hive. I have taken the same, or a very similar species, in a ferret's cage, to which it was probably attracted by the offal given to the ferrets.

[2211.] *Re-queening Worthless Stocks.*—I should be obliged for your opinion whether or not there is any disease in comb which I send by this post? The hive has always been a weak one, although when examined about six weeks ago it seemed fairly well. On opening the hive this morning, however, I found the

bees had all dwindled away, only a few hundreds left, and no brood. I could not find the queen, although there was an empty queen-cell. She was most likely an old one, because last year she made little progress in keeping up the population. The floor is covered with what looks like fine bread-crumbs. One comb contained sealed honey, but the outer ones were entirely empty, and looked to me to be entirely drone-cells, a small specimen of which I also enclose. I have only kept bees about a year, and should like to know whether it would be best to get a new queen, or to put a few combs of brood from one of my other hives, which is very strong and crowded, into the weak hive until they produce another queen. If it is foul brood I shall certainly burn the lot.—S. T. B, *Sheffield, May* 26.

Reply.—Their is no sign of disease in comb received, and no indication of there having been brood in the cells for some time past. The stock has evidently been queenless for a good while, and, as the bees will all be old and only few in number they are quite worthless. This being so, it will be folly to even try to "requeen" them at the cost of bees and brood taken from hives now doing well (and where the removed combs are valuable if left alone), to waste them in trying to save a worthless lot of bees.

[2212.] *Inoculation for Stings.—Honey Gathering in Kent.*—Can you give me any advice under the following circumstances? 1. I am trying to manage my bees without any protection for the hands, and have heard that after a certain number of stings one gets inoculated. Now, last year I had sixteen stings, and this year have already had twelve at various times, and the last, which I have just got, seems to be worse than any others. Can you give me any hopes that if I persevere I shall not suffer in time, or had I better give up trying and take to gloves again?

We have thirteen hives, and three or four of them are beginning to seal over the honey in their supers. This, in comparison with what I have read of in the Bee Journal, seems to me forward for the season. Am I right in thinking so?—A Sufferer, *Greenhithe, Kent, May* 28.

Reply.—1. It is quite certain that nearly all bee-keepers become so inured to stings by inoculation that they feel little or no painful effects at all. While advising a little longer trial we should try to avoid stings as much as possible by handling the bees very carefully when operating on hives. 2. The condition of your hives is very good indeed judged by many reports of the present backward season.

[2213.] *Preventing Swarming (?).*—When I took my hives to the heather last season, an old bee-keeper told me that he had *prevented swarming* by nailing a piece of queen excluder zinc across the entrance; no doubt giving space at the same time. This seems almost too good to be true, and too simple a remedy for a terrible nuisance. Kindly say what you think? If effective it would be an immense boon to bee-keepers.—J. S., *Stockton-on-Tees, May* 29.

Reply.—The idea of preventing swarms by the above method is altogether absurd, and we can hardly credit it as the suggested remedy of any practical bee-keeper. It would lead to all sorts of complications.

[2214.] *Queen Killed when Swarming.*—1. Can you inform me what has been the cause of death with the enclosed queen? She headed a very fine swarm from one of my hives to-day, which was shaken out in front of a frame-hive; but as the bees did not appear to be inclined to run up I returned to the bush from which the swarm came and found a fair number of bees, including the queen enclosed, dead. 2. What had I better now do, as the swarm has clustered to-night on the empty hive? I think of returning them to the parent hive to-morrow, and allowing them to swarm again, which, I suppose, they will do on about Friday next, as they swarmed on Wednesday last but returned. 3. I suppose it is of no use to give the present swarm a comb of brood and queen cell from the parent hive.—H. C., *Norwood, S.E., May* 28.

Reply.—1. The dead queen (an adult) shows no sign of injury to account for death, nor can we offer any explanation of "a fair number of bees, including the queen," being found dead where the swarm clustered. An examination of the hive might enable us to diagnose the case, but the few details given do not help us much. 2. If the swarm was left queenless—through death of queen—the bees will have returned to the parent hive before this reply reaches you, and they will probably issue again when the first young queen hatches out, or, as you suppose, after the usual interval between a first and second swarm. 3. The swarm will have returned, as stated above, if there is no queen along with the bees.

Echoes from the Hives.

Norwood, London, S.E, May 20.—These lines are penned while sitting out among the bees. My six stocks are working for all they are worth, and seem to rejoice with me in their happy "buzz" at the welcome change in the weather. The aspect a month ago was gloomy in the extreme, but the bees have made up a lot of lost ground since, and now promise well. In about three weeks our harvest from the limes will be on, and to-day we have given to all hives the full complement of frames, preparatory to putting on the supers at end of next week. Speaking for ourselves, we love the bees because of the lessons they teach us—lessons in combination, tact, energy

and forethought, which come home to us as showing how much can be done by "a long pull, a strong pull, a pull altogether," the motive being "all for each and each for all.—Two Bee Blossoms.

Yorkshire, East Riding, May 23.—Ruskin said there was no such thing as bad weather, but only different kinds of weather. This may be so, but a local paper has a long paragraph headed, "Storms and Floods—Extraordinary Weather in Holderness." It goes on to say: "The extraordinary weather of the last few weeks is having a very serious effect on agriculture, and a similar outlook in Holderness to that which existed at the early part of the present week is probably unknown. Drains have filled to overflowing, and the land has been in many places several inches under water. Whatever may be the ultimate result of the phenomenal spell of wet weather, farmers have been considerably delayed in sowing, &c." I think if the bees were consulted, they would say the weather was "atrocious," in spite of Ruskin. In fact, ever since the cold spell in March, which was accompanied by a heavy snowstorm, we have been deluged with cuttingly cold winds for a change. Under these circumstances, bees have made no progress. Of my fourteen stocks, the three Ligurians lead the van, closely followed by the Carniolans, the English making a bad third; but even the strongest stocks will not as yet draw out foundation. Our season is, of course, late; things are so backward it will be almost a month before we have any white clover. Apple blossom is only just coming out, and lilac still a thing of the future; fruit culture is, however, not carried on, except to a limited extent in gardens, with a few orchards. Farmers hereabouts do not understand the value of shelter, and till they do, fruit culture cannot be profitably carried on. But they grow acres of white clover, not for mowing, but grazing, so let us hope there is a good time coming for—the bees. Holderness, I may explain, roughly comprises the district between the Humber and Bridlington and ten miles inland.—Alpha, *Hull.*

Villa Rominger, Tübingen, Germany, May 27.—On May 15 last the village schoolmaster of Kusterdingen (Würtemberg) took his first swarm of the season. Throughout the whole of this district the very unfavourable weather during the greater part of April affected the bees to no small extent, so that feeding had to be resorted to even such a short time ago as the beginning of this month; however, the glorious weather during the last few days has allowed our favourites to regale themselves, and honey is coming in plentifully from the rape. There is an old saying that when the "Maikäfer," or cockchafers (*Melolontha vulgaris*), are very plentiful a good year can safely be predicted. I find in my "Nature Notes" of the present year a remark to this effect, prophesying a superabundance of cockchafers. As far back as March 19, and to-day (May 20), the whole of the town and surrounding country of Tübingen are taken possession of by them. So far, everything goes to confirm this old saying. Vegetation is making rapid strides, and the more flowers—*normal*—the more honey, provided our bees are sufficiently strong to avail themselves of the abundant flow of nectar. In some of my stocks (the hives *truly* "made in Germany," much to my great regret) brood extends even to the very outside frame. To avoid swarming here is of immense importance, if for no other reason than to prevent a swarm issuing over the heads of the Germans, who might be thereby inconvenienced; and if a policeman were one of the number it would simply mean good-bye to your bees for ever!—R. Hamlyn-Harris.

Hereford, May 26.—We have a busy time coming on just now. I have bees working in the supers, and there is plenty of blossom about, so that given time and suitable weather it looks hopeful for a good "take" of honey later on. I find the super-clearer a great help in taking honey. I make my own and fit the "Porter escape" in, so that it comes a little cheaper. What with my daily work and then bees and garden (I have a fairly large one), and hive and appliance making, I have not much time to spare. My two boys are both a great deal too small to help me with the bees, although one is very fond of them, "as long as they don't bite," as he says.—H. A.

METEOROLOGICAL

Observations taken at Duddington, Stamford, Northants, for the Week ending May 27, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
May 21....	29·93	46·0	52	45	7	48·3	·25
,, 22....	29·99	43 8	58	41	17	49·0	·08
,, 23....	29·92	57·5	64	43	21	52·9	·07
,, 24....	29·69	54·1	61	47	14	53·6	·24
,, 25....	29·88	45·3	51	43	8	46·8	—
,, 26....	30·08	47·0	51	35	16	42·5	—
,, 27....	30·30	47·1	54	33	21	42·9	—
Means	29 97	48·7	55·9	41·0	14 9	48·0	·64*

* Total, ·64 in.

Mean vapour tension, 0·259 in.; mean relative humidity, 75 per cent.; mean temp. of the dew point, 40°·8. The week's rainfall, viz., ·64 in., =14,478·72 gallons, or 64·64 tons to the acre, or 3·20 lb. to the square foot. For the week ending May 20, the mean temp., viz., 53°·9, was +2°·2, and the rainfall, viz., ·92 in., +·40 in. The mean temp., April 30 to May 20, viz., 49°·5, is −1°·0, and the rainfall, viz., 1·52 in., +·15 in. The mean temp., January 1 to May 20, viz., 42°·9, is +0°·7, and the rainfall, viz., 8·19 in., +·12 in. Potatoes blackened by frost during the night of the 26th. Hoar frost at 4.0 a.m. on the 27th.

In the B.J. for May 25, "For the week ending May 13 . . . . . and the rainfall, viz., ·59 in.," should have read "is +·14 in." (not "−·14 in.").

Fred. Coventry.

Duddington, Stamford, May 29.

Bee Shows to Come.

June 5 to 8 at Windsor.—Bee and Honey Show in connection with the Royal Counties Agricultural Society. Several classes for past season's honey. Schedules from A. D. Woodley, Hon. Sec. Berks B.K.A., 17, Market-place, Reading. **Entries closed.**

June 9 and 10 at Epping.—Show of Bees, Honey, and Appliances in connection with the Essex Agricultural Society. Schedules from Mr. G. F. Offlahertie, Monghyr Cottage, Loughton, Essex. **Entries closed.**

June 19 to 23 at Maidstone.—"Royal" Agricultural Society's Show. Bee and Honey Section under management of the B.B.K.A.

June 30 at St. Ives.—Hunts B.K.A. annual show of honey, hives, &c. Open classes. Schedules from C. N. White, St. Neots.

July 13 and 14 at Louth.—Honey, Hives, and Bee Appliances in connection with the Lincolnshire Agricultural Society. Bee Department under the management of the Lincolnshire B K.A. Schedules from R. Godson, Hon. Sec. Lincolnshire B.K.A., Tothill, Alford. **Entries close June 13.**

About the Middle of July, in the Home Park, Windsor (the date to be fixed by her Majesty the Queen).—Show of Honey and Bee Appliances, Berks B.K.A. (Windsor District), in conjunction with the Prince Consort's Association. Open Classes for Hives and Appliances, also Open Classes for Three Sections and Three 1-lb. Jars (free entry). Exhibits to be sold for the benefit of H.R.H. Princess Christian's Nursing Fund. Schedules from Mr. W. S. Darby, Hon. Sec., Consort Villas, Clewer, Berks. **Entries close July 3.**

July 19, 20, and 21 at Hull.—Bee and Honey Show in connection with the Yorks Agricultural Society. Schedules from Marshall Stephenson, Secretary, York. **Entries close June 10.**

July 19 at Pembury, Tunbridge Wells.—Honey Show in connection with the Gardeners' Flower Show. **Open class** for this season's honey. Schedules from W. Kemp, 2, Hill View, Pembury, Tunbridge Wells. **Entries close July 8.**

July 21 and 22, at Knowle.—The annual exhibition of the Bristol, Somersetshire, and South Gloucestershire B.K.A. will be held in connection with the local Horticultural Society's show. Schedules from Miss H. Dawe, Long Ashton, near Bristol. **Entries close July 15.**

August 3 at Loughton, Essex.—Honey Show in connection with the Loughton Horticultural Society Annual Exhibition. Four classes for honey open to County of Essex. Entry fee, 6d. Schedules from C. E. Skinner, Hon. Secretary, Loughton. **Entries close July 29.**

August 7 at Beddington Park, near Croydon.—Surrey B.K.A. Annual Show, in connection with the Beddington, Carshalton, and Wallington Horticultural Society. Increased prizes. Five Open Classes, including single 1-lb. jar and section, with free entry. Schedules from F. B. White, Hon. Sec , Marden House, Redhill. **Entries close July 30.**

August 7 and 8, at Delapre Park, Northants.—Northants B.K.A. Honey Show in connection with the Horticultural Exhibition. Three open classes with special prizes, including one for single 1-lb. jar of honey (entry free), six prizes, first prize, 20s. Schedules from Robt. Hefford, Hon. Sec., Kingsthorpe, Northants. **Entries close August 1.**

August 9, at Marlow, Bucks.—Annual Show in connection with the Marlow Horticultural Society, under the auspices of the Berks B.K.A Bees, Hives, and Appliances, Honey, &c. Eleven Open Classes. Liberal Prizes.—For schedules, apply to A. D. Cripps, Hon. Sec., High-street, Marlow. **Entries close August 5.**

August 16 and 17 in St. John's Schoolroom, Blackpool.—Annual Show of the Blackpool and Fylde Horticultural Society. Exhibition of honey under the auspices of the Lancs B.K.A. Open classes for twelve 1-lb. sections and twelve 1-lb. jars extracted honey, with prizes of 20s., 10s., and 5s. for each. Schedules from R. Atken, Sec., 17, Devonshire-road, Blackpool. **Entries close August 7.**

August 29 at Northwich.—Cheshire B.K.A. Show, in connection with the Cheshire Agricultural Society. Open classes for honey, wax, and single hives. Schedules (shortly) from Mr. T. A. Beckett, St. Werburgh's Chambers, Chester.

September 6 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 30.**

Notices to Correspondents & Inquirers.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

CYMRO (Penybont).—*A Bee-Enemy.*—The "creature" received is a fine full-grown "death's-head moth." These formidable-looking insects fortunately do not often trouble hives in this country, but they do at times commit great ravages by feeding on the stores of honey when they manage to find an entrance to hives. "How it got inside" we cannot explain, not having seen your hive entrance, but we do not recollect ever hearing of one moth destroying a stock of bees, as you suppose this to have done.

"SUNSHINE" (Birmingham).—*Consanguinity. Buying Queen-cells.*—1. The harm arising from queens mating with drones from the same hive is simply the degeneration of stock from consanguinity or in-breeding. 2. If you mean queen-cells with hatching queens in them, these are not marketable items, being too perishable.

A. D. (Stirling).—Bad case of foul brood with twelve healthy hives close to. We advise destruction of the diseased stock.

J. Q. (King's Norton).—*Buying Nuclei.*—1. A "nucleus" colony of bees "without a queen" is somewhat analagous to a swarm without one. Practically, it is only "buying frames of brood." We should advise sending your Italian queen to be safely introduced to the nucleus before getting the latter home. 2. A four-frame nucleus (with queen, of course) is usually charged about 12s. 6d.

C. T. (Waskerley).—Comb is affected with foul brood.

"NUMBER 9" (Kidderminster).—There is no foul brood in comb nor can we state cause of dead larvæ being found in the cells without some further particulars as to hive and treatment. The comb is very old and needs renewing, while what are looks like signs of overdosing with something.

R. N. (Westmoreland).—It is well the stock to which the bees and combs were united is a queenless one and so of little value, for the comb sent shows undoubted foul brood of old standing.

J. B. (Ilminster).—*Bad Case of Foul Brood.*—No good can result unless bees are got off diseased combs and dealt with as directed on page 148 of "Guide Book."

Editorial, Notices, &c.

THE "ROYAL" SHOW AT MAIDSTONE.

A RECORD ENTRY OF BEE EXHIBITS.

Our readers will no doubt share the pleasure with which we publish the following note from the Secretary of the British Bee-keepers' Association :—

"DEAR SIRS,—Will you kindly allow me, through the medium of the B.B.J., to thank all those members of the B.B.K.A. and its affiliated Associations who have so generously responded to the appeal for entries in the Honey and Hive Department of the Royal Show to be held at Maidstone, June 19 to 23, inclusive. As a result, we are this year able to catalogue a much larger entry than on any previous occasion ; and, in order to accommodate the anticipated exhibits, it has been found necessary to secure some additional space for the "Show." The whole of the produce at the exhibition will be judged on Saturday, June 17, so that the award cards may be expected to be in position and the various departments open to full inspection on the morning of Monday, the 19th. This will be an undoubted advantage and of special interest to first-day visitors. Bee-keepers wishing to see the newest appliances and inventions connected with the industry, are likely to be well rewarded by a careful inspection of the articles on view ; in fact, nothing can be more helpful to those wishing to be thoroughly "up-to-date," than going to see the "Royal" Show of 1899, the bee department of which promises to stand out pre-eminently as the finest exhibition of the kind yet held in England. Do not miss it! The officials present will be glad to again have an opportunity of shaking hands with old friends, and of making the acquaintance of others to whom the term may not as yet apply.—EDWIN H. YOUNG, *Sec., B.B.K.A.*, 12, *Hanover-square, London, W., June* 5, 1899.

INSECTS AND FLOWERS.

SOME CONSIDERATIONS WITH REGARD TO COLOUR AS A MEANS OF ENTICEMENT.

BY R. HAMLYN-HARRIS, F.Z.S., F.E.S., &c.

"A thing of beauty is a joy for ever."

I have always had a difficulty in understanding how it is that certain insects apparently refuse to visit certain flowers, and it may be worth our while to consider the matter in its relationship to bees.

How well I remember when, as children, we used to delight in visiting fields where flowers grew abundantly, which possessed the greatest quantity of nectar ; and we never seemed to tire of plucking their corollas and sucking the sweet juice. And wee mites though we were, instinct seemed to teach us which flowers contained the most.

During a period of observation extending over many years I have repeatedly noticed that flowers of certain colours remain unvisited by insects ; the same peculiarity occurring year after year. And also, after closely observing the movements of bees in a confined area, such as a conservatory (the one I am alluding to being 30 by 20 ft. and 12 ft. high, at Hambrook in Gloucestershire). With every kind of flower then in bloom it became more than evident that scarlet blossoms particularly were entirely ignored. In endeavouring to account for this, my mind travelled first on to the subject of unnatural heat, and I then came to the conclusion that, in consequence of this, it might perhaps be that very little nectar was secreted by those flowers accustomed to less heat in their natural state ; but although this may be, and no doubt is, to some extent the case, I am more and more inclined to believe that the colour of flowers acts directly or indirectly, either as a means of enticement or the contrary, and that, unless the bee is blind to certain colours, instinct teaches her to avoid those of little service in the execution of her duty. But the question naturally presents itself:—Can bees distinguish these flowers? If they can, why do they not visit them? No bee-keeper needs to be told how wonderfully God has planned the most delicate tissues and receptacles for nectar as a means of allurement to insects in order to bring about the necessary fertilisation of plant life. I have known honey-bees, enticed by the fragrant aroma, display great excitement in the endeavour to get through the glass of our conservatory to reach some *Hoya carnosa*, which was in full bloom and literally dripping with nectar ; these blossoms were of a lovely waxy whiteness. Again, I have watched for days as the blooms in a peach house have been most frantically worked at by bees until it seemed as if every blossom must be fertilised. The bees in question flew about the outside of the house until the gardener opened the windows and (as is not always the case) the bees thoroughly knew their way in and out.

We often find that where fertilisation of certain plants takes place very readily and, when this is so, of course, the assistance of bees and other insects is not necessary, as, for instance, when wind, birds, &c., are employed ; little nectar is available, and no doubt this influences the instinct of bees not to waste their time over hunting useless fields.

Without any doubt, then, we may confidently, so far as insects are concerned, regard blue and violet (and white if that may be termed a colour) as their "pet" colours because these possess a very marked influence as a means of enticement. Yellow is less frequently visited whilst green is treated with extreme indifference.

Some years ago experiments of a very interesting character were made in order to

verify, if possible, the ideas of zoologists and botanists on this very subject, and with what result? Let us see: Two groups of plants were placed side by side (about 2 ft. apart) in a garden bed. One group consisted of pelargonium zonale—commonly known as scarlet pelargonium—the second group of epinobium augustifolium Linné, the small leaved willow herb.

The scarlet flowers of the pelargonium and the violet red ones of the willow herb open at the same time. Certain species of lepidoptera (butterflies) and bees swarmed around, but curious to narrate, the butterflies stopped at the plants and gave about equal attention to the willow herbs and the pelargonium, but the bees took absolutely no notice of the scarlet red blossom but simply revelled in the blossoms of the violet-red willow-epilobe!

In the botanical gardens in Vienna three groups of herbaceous plants stood side by side, viz., the blue Hyossopis officinalis, the pale Monarda fistulosa, and the scarlet Monarda didyma. All three blossom at the same time during the middle of July.

Honey-bees came flying in numbers, but only to visit the blue hyssop and the violet monarda; the scarlet Monarda didyma being strictly avoided by them. I am not sure if these three are still standing in their original position, but I know that for years this was to be witnessed. It is naturally difficult to say whether this is merely a matter of dislike or instinct on the part of bees, or, as some incline to think, that they are really colour-blind when it concerns red (scarlet), just as some human beings are with regard to some colours.

If, therefore, we accept the latter theory, it becomes easy to understand how it is that in these two cases the scarlet pelargonium and the scarlet monarda respectively were not visited; and if we incline to the second theory, we must suppose that the scarlet flowers are entirely devoid of nectar. If, on the contrary, it is merely a question of dislike, why do bees possess such a strong antipathy to scarlet?

These experiments, though simple, are of great importance, as they throw some light on the matter, for I am sure most practical bee-keepers can confirm me in saying that bees under normal conditions will never work on scarlet-coloured flowers of any kind. And if bees do not see red, we must naturally assume that those nerves of the eye which are affected by this colour are wanting.

The question here is merely of the bee, because other insects are known to be very partial to scarlet blossoms. Butterflies visited the scarlet pelargonium, and one of the larger Bombi in great numbers work the scarlet monarda; and it is interesting to note that the Kolibris are particularly partial to such blossoms.

Mr. Dobbie speaks of similar experience. He says of asters that they are great favourites of bees during September and October, but that he had observed that the dull white flowers were preferred to others with more attractive and showy blossoms.

It has been said that bees do not visit the flowers they are not accustomed to, and this is given as an explanation of like and dislike of colour; but if this were so, why could bees not get accustomed to scarlet also?

It is worthy of note to record here the fact that in very dry seasons red clover has been known to have been visited and gathered from unceasingly for days by honey-bees, and that because under these abnormal circumstances the corolla is by no means too long for the bee's proboscis. This occurs very seldom, but it is no doubt due to the dryness of the soil and atmosphere producing a somewhat stunted growth of vegetation. Nectar, however, was abundant in the blossom.

These few considerations I put before your readers, not from any desire to air my own opinions—on the contrary, I have kept my own thoughts in the background as much as possible—but in order to open up a subject as yet unexplored to any great extent. And if any of your readers profit only in a small degree by the study of these pure "themes," the object of the writer will have been attained; but if, in addition, we have gained one more step of the ladder of knowledge, we shall be still more enabled to view with delight this vast universe, and say—

"All Thy works praise Thee, O Lord!"

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE MOORLAND HARVEST.

[3705.] As an old moor-man, I am offering your readers a few ideas—the boiled-down product of my many years' experience of failures and successes in the attempt to secure what, to us, was our most fickle crop—heather honey.

It does seem early, certainly, to even think of ling bloom, but the seasons move more rapidly nowadays than they used to, and the clover season will be gone and the grouse season on us before we know where we are. Then words come too late. In the old "hut" days we used to save years of experience by several individuals trying various "dodges" and theories in the one season. For example, one year I tried shallow-frame supers *versus* sections for the moors; result, I got much more honey than three of my best competitors put together. *Verb. sap.*, I never took another

section to the heather, and have had no cause to regret my decision. My friends also acted on this experience. Perhaps one of the reasons for bees doing better in shallow-frames than in sections may be they cannot get to business with the desired alacrity in that Japanese puzzle-box—a rack of sections. Get inside one—mentally—and see. Then there is the maximum amount of propolisation (what a word!) to get through when "time is honey"; for the secreted nectar is here to-day and gone to-morrow, so wonderful and uncertain are the magnetic conditions amongst the hills and clouds of our uplands. And, again, I have always felt that shallow-frames were made by the bees as a warm barn is to a number of separate chambers, each with its own draughts. One could always work out the filling central combs and bring the outside ones into the warm middle clusters where the business was going on, even when the weather was not perfect and supers not packed. Next (although I know the danger I run in claiming originality in matters bee-keeping), I believe I was the very first to take full sheets of super, or drawn-out super-foundation, to the moors; first wiring them, and afterwards, when the long slab of comb was wanted for table, clipping the wire at its fastenings as the comb lay on the dish, drawing forward the wire endways, thus leaving no visible mark on the beautiful white cappings made by the old brown bees of Britain over the finest imaginable honey—the honey of the ling. We used to have so much trouble, honey-pressing, plumbers'-scrapering and what not with brood-foundations, our heather honey being unextractable in its density.

And now for my most important experience, which met with some opposition, by the way, at the time I advocated it; but as it has stood the test of time I do not heed any opposition it may now provoke. Simply this: extract everything above the brood-nest a week before taking the hives to the moors, and then (three days before going) give syrup in a rapid feeder as fast as the bees can ram it into every vacant cell there is in the brood-nest itself. If we ourselves, as shepherds, were going up, and uncertain as to our food-supply for some time after arrival, I lay one I know would take "something" up. Those having had much experience (at least, in our parts) know that in most years, just as the heather should burst into bloom, St. Swithin and others of that ilk "interfere with the weather," to put it mildly, and bees are taken into an exposed climate, quite different to the one they are used to, say up to a thousand feet higher, where the hills break the clouds, and that mist called Scotch cometh down on men, bees, and ling alike. This continuing for indefinite periods whilst bees starve and sting, and instead of robbing the ling, rob each other's hives, fighting, dwindling so that when that cometh to him who knows how to wait—a grand roaring burst and blaze of sunlight and bloom when one really believes the day is not long enough for the bees and they get the honey by moonlight alone. But alas! the hives are weak, skeps are empty, for bees were starved. By the "new method" (as we used to say in the tent) we have changed all that, and the bee-keeper gets all the clover honey he can get, the check on egg-laying by the queen which generally supervenes disturbance and change of climate, is utilised by brood and bees being well fed from the stores of syrup at a critical time, the bees are saved if wet and cold set in, but if the best happens the queen can recommence laying almost at once in the hatched-out cells. The chief point I have not yet touched, however, and that is the mad rush of successful or fortunate moor-blooming when one just "hits on" does not send thirty to fifty pounds of the best possible stuff to fill the brood-chamber; whence it cannot be reclaimed by the bee-keeper (for who would ever take honey from below?) Rapid feeding then ensures food in bad times, and enables bees to seize the psychological moment that comes to them also. Besides (the chief advantage of this system) forcing them to store all the heather honey in your already drawn-out full-sheet shallow-frame supers should Fortune favour you, but should she frown and weep, why, all the advice and suggestion any can give will not avail, but you will be repaid by an old experience—a healthful struggle against odds.

"To court Dame Fortune's winning smile,
Assiduous wait upon her."

R. A. H. GRIMSHAW, *Potternewtown, near Leeds, June* 2.

NOVEL WAY OF QUEEN INTRODUCING.

[3706.] Being unsuccessful last year in trying direct introduction of an imported Italian queen into a queenless stock of native bees, I adopted the following plan, which might well be called the "Wells' system" of queen introduction (if Mr. Wells does not object). I confined the bees to six frames on one side of the hive by means of a Wells' dummy board and continued the division through the entrance by placing a ¼-in. strip of wood made to project well on to the alighting board; I then liberated the Italian queen and her attendant bees (about 150) on the other side of the dummy board, putting a little naphtha-line in both sides of the hive. In three days nearly all the bees transferred themselves to the side of the hive where the queen was and she soon commenced laying.

This stock had a queen when examined about the end of March; she was most prolific last year and swarmed rather late in June, her age I do not know, but this spring she did not seem very fit and at the end of April I noticed the stock was not working as well as the others, only a few bees carrying in pollen and these with only half a load, so suspected

something wrong, and found the hive queenless, broodless, and eggless. — H. F. J., *Henbury*.

THE "SOLAR" EXTRACTOR.

PACKING BEE APPLIANCES.

[3707.] I note your request in B.J. for experience of the "Solar" extractor. I may, therefore, say that my "Solar"—made in the winter—has already done good work for me this spring. I use a stout galvanised iron melting-plate and place the old combs directly on the plate *without wire gauze*. Every particle of wax is extracted and runs quite clean into the dish placed to receive it.

The refuse left behind on melting-plate I scrape off and wipe the plate clean with an old newspaper (while still hot). The refuse may if desired, be removed from melting plate with a knife scraper when cold.

From two frames of comb put in the extractor—just as taken from the hive—I got nearly 5 oz. of pure wax.

I would like to growl along with "Alpha" (3667, p. 176) *re* packing bee furniture. Having bought a new "Cowan" extractor, I found, when examined, that the sides were so battered in that the cages could not revolve, and in addition there were three holes made right through the side just above the level of honey valve. I want a new honey-ripener; but after my own experience and that of "Alpha" I am inclined to think the makers who have the packing of the goods ought to guarantee delivery safe and sound. Who will do this?—E. W. Carbines, *Cardinham, Cornwall*.

BEE-KEEPING IN THE RIVIERA.

OLD-FASHIONED METHODS.

[3708.] I enclose an extract from the *Entomologists' Record and Journal of Variation*, in which the writer of the article, Dr. Chapman, F.E.S., &c., draws attention to a few facts *re* bee-keeping in the Riviera.

Dr. Chapman, though a famous lepidopterist, is not, as will be readily noticed, a bee-keeper.

I think the short account is of sufficient interest for publication in the B.B.J. It reads as follows:—

"On March 17 I came across a bee-keeper about to hive a swarm of apis melifica; the swarming season here is said to be at the latter end of March and in April, so that this was an early one. His hives, which lasted, he said, about twenty years, and some of which looked about that age, consisted of the cork taken from the tree in one piece and closed together again, forming an irregular cylinder, about a foot in diameter and two feet long, closed by a piece of cork at the top, but with the end open, the bottom being placed on the bare ground. This, he said, made their removal to the mountains in summer much easier than if there was a board beneath. August in the mountains was the best season, and the honey was taken just afterwards. During the winter the bees did nothing, but winter must be short for swarming to take place in the middle of March. His method of hiving the swarm was interesting; he wore a bee veil, the swarm being at the top of a branch of an olive tree. He threw a rope over the branch of the tree, and with this slung the hive tolerably near the swarm, the rope being round the middle, so that the hive was horizontal instead of vertical, and with the bottom forming a wide open end. He shook the bees in, and then left it for stragglers to follow in, placing it in its proper position later.

"He had heard of bar-frame hives, but knew nothing of them nor of their working. His station presented some fifty hives, and he had a larger apiary some miles off. I could ascertain nothing about the usual yield of honey."—R. Hamlyn Harris, F.L.S., F.E.S., &c.

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Miss Gayton, a part of whose apiary forms our bee-garden picture this week, may be justly regarded as a typical lady bee-keeper so far as representing those who take up the pursuit less for any pecuniary profit it may yield to themselves, than for the example thus afforded to their more humble neighbours of the small farmer or the rural labourer class. The object is, of course, to induce the latter to take up bee-keeping as a means of increasing their incomes, and in this way Miss Gayton has done as much as any one we know of in furthering all that is good in the bee-industry.

A member of the B.B.K.A. for many years, and now the only lady member of its Council, she regularly travels up to town to attend meetings, while she was a member of the Herts B.K.A. from its formation until it ceased to exist a few years ago.

In response to our usual request, we have received what Miss Gayton terms "A few Notes of my Bee Experiences," from which we extract the following:—

"I began bee-keeping in the autumn of 1876 by the purchase of a stock in a straw skep.

"Always living in the country, and loving all pursuits connected with country life, I had a great desire to keep bees, but until then the other members of my family rather objected to my doing so; every one thinking that the garden—a pretty, old-fashioned one in the village of Much Hadham—would be rendered 'unsafe' to be in with so many bees about. Eventually, however, my one hive was set up.

"The few bee-keepers in our village had only very primitive ideas upon the subject, so I got my first instruction from an enthusiastic bee-keeper, the late Rev. J. H. Hodgson, then the much beloved vicar of Horsham, who

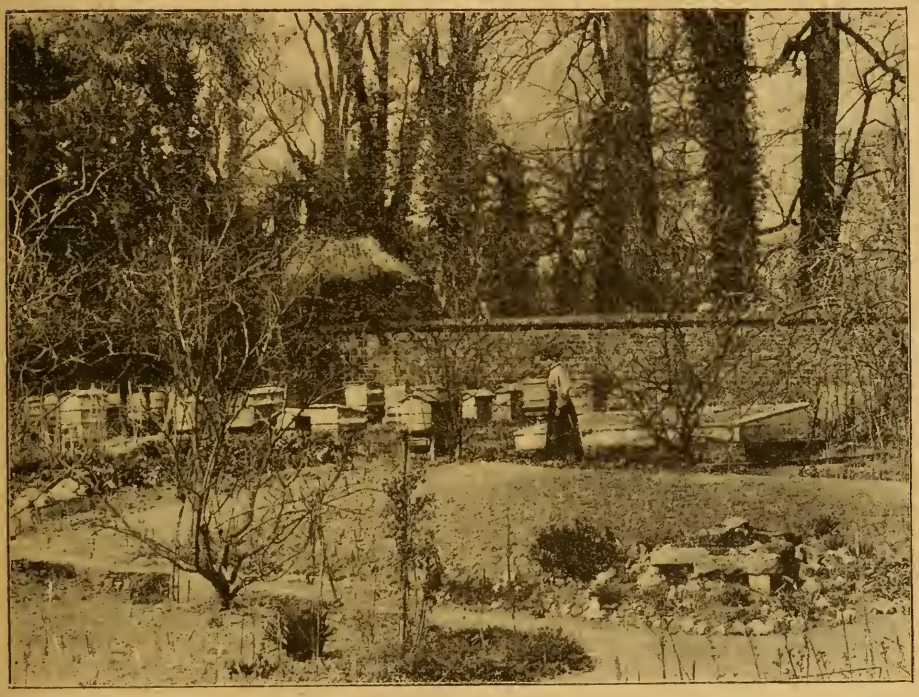
kindly wrote for my guidance some 'Notes for an intended Apiarian.' He also hoped I should soon meet Mr. Cowan, and said, if I followed carefully all the advice he could give me, I should be sure to have success.

"I studied bee-books during that winter, and in the spring of '77 was ready to put my first swarm in a frame-hive. Holding the view that bee-keeping ought to be profitable, I kept a strict account of income and expenses, but two or three years passed before I saw bees manipulated as nowadays."

Just at that time the first village flower show at Much Hadham was arranged for, and Miss Gayton's activity in the cause of bee-keeping was the means of including a honey show as part of the exhibition, together with a visit of the bee tent of the B.B.K.A. These adjuncts were a great success, as was testified to by the Rev. H. R. Peel, who, along with Mr. F. Cheshire and Mr. Huckle, attended the show. Subsequent years saw Miss Gayton a regular exhibititor of honey at shows, and her successes in prize-winning must be numbered by the hundred. In further "Notes" we read:

"After so much of instruction and help from these gentlemen, and later from Mr. Cowan, who explained so much from his own beautiful supers of honey, I felt encouraged to go on in exhibiting, and met with success, with a good sale for my honey. Indeed, the many friendships I have made and kindnesses received from all bee-keepers confirmed my opinion that bee-keeping *was* not only a profitable pursuit, but a very pleasant one. Prices were certainly better in those days than now, for I had a ready sale for all the honey I could get at 1s. 6d. per lb. for comb and 1s. for extracted; but I only sold the best. The district here is entirely an agricultural one—no orchards and no heather—so our harvest is of short duration, not much surplus being brought in after quite the beginning of July.

"In 1879 I introduced my first Ligurian queens, and was delighted with the gentleness and activity of the Ligurian bee. I have not introduced any Ligurian queens since. The hybrids proved to be splendid workers, but require cautious handling as they have not good tempers. I may mention that when manipulating I always don a bee-veil, but never use smoke, and find that bees are more gentle without it. Sometimes in autumn I use apifuge or a clean wet cloth over the hive, but I usually trust to letting light in gradually and only keeping a small part of the hive open at a time, and then, after waiting a few minutes, I can go gently and quietly to work, the bees really retiring out of my way. If, however, anything has made a stock very irritable, I close it up at once and try another day, as I find if a stock is thoroughly "roused" it



MISS M. L. GAYTON'S APIARY, MUCH HADHAM, HERTS.

takes a long time for them to become peaceably inclined again. If I can manage to do my work without causing the smell of the sting poison to be noticed, I find no difficulty in handling the frames."

Regarding the style or type of hive used by Miss Gayton, she says :—"When I started bee-keeping I purchased all my hives from the late Mr. C. N. Abbott, and they are of the type used at the time. So that when the 'Standard' frame was decided upon some years later, I had too large a stock of hives on hand to go to the expense of changing. But I have not found the taper-shaped frame too large for this district. I was sorry when the 'trade' ceased to purchase 2 lb. or 3 lb. sections, for I always secured a larger harvest than now, when only the 1 lb. section is used.

"I always feed in early spring with medicated syrup and consider scrupulous cleanliness of hives and all appliances to be of the utmost importance. When manipulating, too, I invariably have a bowl of water (in which is some disinfectant) to wash my hands after handling one hive before opening another. This practice may partly account for the gentleness of bees, as the scent of strange bees will always irritate a stock.

"In October, 1883, I was asked by the Rev. H. R. Peel to give my bee experiences and statement of accounts up to that time to Mr. Jenkins, then Secretary of the Royal Agricultural Society, as he wished to mention bee-keeping in a lecture he was about to give, and was afterwards surprised to see my account published in the *Farmers' Gazette.* I started with one hive and a total outlay of £1 12s. 6d., and at this time I had twenty-eight stocks in frame-hives, with all necessary appliances, and had earned enough to repay *every* expense, and had put by £50 to credit of my bee account in the Post Office Savings Bank.

"The best single year's harvest I have ever had was in 1885, when my ten best hives yielded 1,400 lb.—my total thirty-two stocks giving me nearly 3,000 lb. of honey.

"Success in bee-keeping, however, is not 'all honey.' One must have many stings and gain experience through mistakes and failures; but one thing is certain if profit is to be made, bees must receive the care they require at the right time. There must be no procrastination—they, as well as 'tide and time, will not wait for any one,' and if the space, &c., they need is not given them when they want it, they alter their arrangements accordingly, often to the disappointment of their owners. It is a lesson to learn again and again.

Do the work that's nearest,
Tho' it's dull at whiles—
Helping though it may be
Lame dogs over stiles.'"

¶ Those who best know Miss Gayton appreciate the "helping" she has rendered to our craft, and cordially thank her for it.

Queries and Replies.

[2215] *Bees Refusing to Enter Surplus-Chambers.*—Last March, as you may remember, I drove two of my skeps and united both lots in a frame-hive. Owing, I expect, more to luck than good management, they are now very strong, with nine frames full of brood, but I cannot get them to take to a super. They persist in building queen-cells and hanging out, although honey is coming in very fast. Can you tell me what to do, as I have no drawn-out combs to give them? My other two frame-hives are extremely strong, one of them (holding fifteen frames) having brood in twelve frames, and has two supers on, one of the supers being nearly fit for removal, although only put on ten days ago. Now with regard to my queens, I know that they are all old ones except one hive from which I had a swarm last year. I should like to re-queen all my stocks in the coming autumn, but, try how I may, I have never yet seen the queen of any hive. Can you tell me a way out of the difficulty, as it seems to me I cannot re-queen when I cannot find and remove the old ones?—C. A. Atchley, *Willsbridge, June* 3.

Reply.—There must surely be some hitch in the arrangements for giving bees access to supers to cause them to refuse possession in such weather as this. We can only advise an examination to try and find out if there is free access. "Queen finding" will come with a little experience.

[2216.] *Wild Bees in Walls.*—Would you kindly name the insects of which I enclose specimens. Are they the ordinary honey bee, or the wild sand bee? I ask this because my attention has been called to these bees, supposing them to be part of a swarm. I might say they have made their home or nest in a wall some 21 yards long, and pass in and out of the wall in about thirty or forty different places.—J. H. Horn, *Redhill, May* 29.

Reply.—The specimens sent are the females of a common wild, solitary bee, *Andrena rosæ.* The above observations are interesting because the bees of this genus generally make their burrows in the ground.—(F. W. L. Sladen.)

[2217.] *Driven Bees Deserting Skep.*—On examining my hives I found two rather weak stocks. One was queenless, so I determined to unite the two. In order to do this I drove the bees of the stock with a queen into an empty skep and sprinkled them with scented syrup. About noon the following day the bees and queen all cleared out of the skep, and went to a neighbouring apiary, where they tried to get into two or three inhabited hives. In the evening I found the queen balled, with a sting in her back on the alighting board of one of my neighbour's hives. Could you tell me what made them leave the empty skep,

and is it not an uncommon thing for bees to sting a queen?—T. H, *Hackenthorpe, May* 31.

Reply.—The mistake was your own in "driving the bees of the stock with a queen into an empty skep," and leaving them so till noon on the following day. Both lots should have been driven (if in skeps), and after uniting—by shaking the bees well up in one skep—should have been thrown out in front of the original skep and allowed to run in. They would then have remained with the queen and brood, from which one lot had been driven.

[2218] *Removing Bees from Chimney.*—Would you kindly inform me as to the best plan of driving a stock of bees from a dummy chimney in our local school here? The chimney is situated between two others, but there is no fireplace in the one I refer to, which is close to the roof and not more than 6 ft. from the open air.—H. B., *Meopham, Kent.*

Reply.—There is no fixed "best plan" of removing a colony of bees from such a place as is described above. "Driving," however, is out of the question, and it only remains to ascertain if there are any means of "getting at" the bees so as to enable the operator to remove the combs by cutting them away from their present attachments. Unless this can be done, it is useless for us to advise any plan of doing the work. What we do recommend is getting some experienced bee-keeper to examine the place and give his opinion as to the possibility of removal after inspection.

Echoes from the Hives.

Honey Cott, Weston, Leamington, June 5.—After a very precarious spring, during which we have had great variations of temperature, and a lot of wet, stormy weather, we seem at last to have drifted into very nice weather for the bees, which, if it continues, bids fair for a good honey season. There is a goodly show of hawthorn bloom and "cadlock" (charlock) in this district; field-beans also promise a good yield. I had my first swarm on May 30, which just saved the reputation of my bees, for, as I always say, if some of my hives do not swarm in May they disgrace themselves.—John Walton.

Biggleswade, North Beds, June 3.—The season in this part has been a trying one for bee-keepers; I know of stocks that came through the winter strong, with plenty of stores in early spring, some of which are dead from starvation. I often wish that bee-keepers would bear in mind how treacherous a time it is for bees from the beginning of March until honey begins to come in. I think it the most important time of the whole year, so far as needing watchfulness on the bee-keeper's part. Stocks found with two-thirds of their winter stores on hand at the beginning of March are not seldom found foodless before the natural supply is coming in. I have been visiting apiaries in this neighbourhood, and never did I find colonies so short of stores as some seem to be this year. When will the time come when we shall get that long-looked-for blessing—compulsory powers for ridding us of foul brood?—G. A. Martin.

METEOROLOGICAL

Observations taken at Duddington, Stamford, Northants, for the Week ending June 3, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
May 28....	30·43	50·0	62	32	30	46·1	—
,, 29....	30·41	54 8	66	34	32	49·0	—
,, 30....	30·37	61·5	70	36	34	52·0	—
,, 31....	30·34	61·9	73	43	30	57·1	—
June 1....	30·28	66·5	75	43	32	57·9	—
,, 2....	30·10	70·0	74	41	33	56·5	—
,, 3....	30·21	59·8	70	42	28	55·0	—
Means	30 31	60·6	70·0	38·7	31·3	53·4	—

Mean vapour tension, 0·284 in.; mean relative humidity, 53 per cent.; mean temp. of the dew point, 43°·1. For the week ending May 27, the mean temp., viz., 48°·0, was −5°·2, and the rainfall, viz., ·64 in., +·09 in. The mean temp., April 30 to May 27, viz., 49°·2, is −2°·0, and the rainfall, viz., 2·16 in., +·24 in. The mean temp., January 1 to May 27, viz., 43°·1, is −0°·5, and the rainfall, viz., 8·83 in., +·21 in.

Observations taken at Duddington, Stamford, Northants, during May, 1899.

Barometer.

Highest, 30·43 in., on the 6th and 28th.
Lowest, 29·40 in. on the 15th.
Range, 1·03 in.
Average height, 29·99 in.

Thermometers.

Highest Max. Shade Temp., 73 deg., on the 31st.
Lowest Max. Shade Temp., 51 deg., on the 25th and 26th.
Highest Min. Shade Temp., 51 deg., on the 20th.
Lowest Min. Shade Temp., 30 deg., on the 4th and 5th.
Range, 43 deg.
Greatest Daily Range, 34 deg., on the 30th.
Least Daily Range, 5 deg., on the 12th.
Highest Shade Temp. at 9 a.m., 61·9 deg., on the 31st.
Lowest Shade Temp. at 9 a.m., 43·9 deg., on the 22nd.
Highest Mean Daily Temp., 57·9 deg., on the 18th.
Lowest Mean Daily Temp., 42·5 deg., on the 26th.
Mean of Highest Daily Readings, 52·9 deg.
Mean of Lowest Daily Readings, 41·0 deg.
Mean of Daily Range of Temp., 11·8 deg.
Mean Temp. of the Month, 47·0 deg.
Number of Days Frost in Shade, 4.
Mean of Dry Bulb (9 a.m.) Readings, 50·7 deg.
Mean of Wet Bulb Readings, 46·1 deg.
Mean Vapour Tension, 0·266 in.
Mean Relative Humidity, 72 per cent.
Mean Temp. of the Dew Point, 41·5 deg.

Rainfall.

Number of days on which ·01 in. or more fell, 14.
Greatest Fall in 24 Hours, 0·38 in. on the 20th.
Total Fall in the Month, 2·16 in.
Total Fall in the Year, 8.83 in.

The rainfall for the month, viz., 2·16 in., is −0·11 in., and for the year, viz., 8·83 in., is − 0·13 in. The mean temp., viz., 47·0 deg., is −5·0 deg., and the mean temp. for the year, viz., 42·9 deg., +0·3 deg.

Fred. Coventry.

Duddington, Stamford, June 5.

Bee Shows to Come.

June 9 and 10 at Epping.—Show of Bees, Honey, and Appliances in connection with the Essex Agricultural Society. Schedules from Mr. G. F. Offlahertie, Monghyr Cottage, Loughton, Essex. **Entries closed.**

June 19 to 23 at Maidstone.—"Royal" Agricultural Society's Show. Bee and Honey Section under management of the B.B.K.A.

June 30 at St. Ives.—Hunts B.K.A. annual show of honey, hives, &c. Open classes. Schedules from C. N. White, St. Neots.

July 13 and 14 at Louth.—Honey, Hives, and Bee Appliances in connection with the Lincolnshire Agricultural Society. Bee Department under the management of the Lincolnshire B.K.A. Schedules from R. Godson, Hon. Sec. Lincolnshire B.K.A., Tothill, Alford. **Entries close June 13.**

About the Middle of July, in the Home Park, Windsor (the date to be fixed by her Majesty the Queen).—Show of Honey and Bee Appliances, Berks B.K.A. (Windsor District), in conjunction with the Prince Consort's Association. Open Classes for Hives and Appliances, also Open Classes for Three Sections and Three 1-lb. Jars (free entry). Exhibits to be sold for the benefit of H.R.H. Princess Christian's Nursing Fund. Schedules from Mr. W. S. Darby, Hon. Sec., Consort Villas, Clewer, Berks. **Entries close July 3.**

July 19, 20, and 21 at Hull.—Bee and Honey Show in connection with the Yorks Agricultural Society. Schedules from Marshall Stephenson, Secretary, York. **Entries close June 10.**

July 19 at Pembury, Tunbridge Wells.—Honey Show in connection with the Gardeners' Flower Show. **Open class** for this season's honey. Schedules from W. Kemp, 2, Hill View, Pembury, Tunbridge Wells. **Entries close July 8.**

July 21 and 22, at Knowle.—The annual exhibition of the Bristol, Somersetshire, and South Gloucestershire B.K.A. will be held in connection with the local Horticultural Society's show. Schedules from Miss H. Dawe, Long Ashton, near Bristol. **Entries close July 15.**

August 3 at Loughton, Essex.—Honey Show in connection with the Loughton Horticultural Society Annual Exhibition. Four classes for honey open to County of Essex. Entry fee, 6d. Schedules from C. E. Skinner, Hon. Secretary, Loughton. **Entries close July 29.**

August 7 at Beddington Park, near Croydon.—Surrey B.K.A. Annual Show, in connection with the Beddington, Carshalton, and Wallington Horticultural Society. Increased prizes. Five Open Classes, including single 1-lb. jar and section, with free entry. Schedules from F. B. White, Hon. Sec., Marden House, Redhill. **Entries close July 30.**

August 7 and 8, at Delapre Park, Northants.—Northants B.K.A. Honey Show in connection with the Horticultural Exhibition. Three open classes with special prizes, including one for single 1-lb. jar of honey (entry free), six prizes, first prize, 20s. Schedules from Robt. Hefford, Hon. Sec., Kingsthorpe, Northants. **Entries close August 1.**

August 9, at Marlow, Bucks.—Annual Show in connection with the Marlow Horticultural Society, under the auspices of the Berks B.K.A Bees, Hives, and Appliances, Honey, &c. Eleven Open Classes. Liberal Prizes.—For schedules, apply to A. D. Cripps, Hon. Sec., High-street, Marlow. **Entries close August 5.**

August 16 and 17 in St. John's Schoolroom, Blackpool.—Annual Show of the Blackpool and Fylde Horticultural Society. Exhibition of honey under the auspices of the Lancs B.K.A. Open classes for twelve 1-lb. sections and twelve 1-lb. jars extracted honey, with prizes of 20s., 10s., and 5s. for each. Schedules from R. Atken, Sec., 17, Devonshire-road, Blackpool. **Entries close August 7.**

August 29 at Northwich.—Cheshire B.K.A. Show, in connection with the Cheshire Agricultural Society. Open classes for honey, wax, and single hives Schedules (shortly) from Mr. T. A. Beckett, St. Werburgh's Chambers, Chester.

September 6 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 30.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

J. P. D. (Hendon).—*Changing to Standard Frames.*—If the standard frame will hang properly in the larger hive now occupied by bees it will work out all right to insert standards fitted with foundation in lieu of the deep frames. The change must, of course, be made gradually by introducing say, two new frames at once in centre of brood nest, and two others about a week later. When you have the full number of standard combs it will only need to cut away any comb built below bottom-bars of frames before inserting them in the new hive on the original stand, removing the old hive out of the way altogether.

T. B. (Stanley, Crook).—*A Worthless Stock.*—The comb is affected with foul brood, and queen is a drone-breeder, so that the stock is utterly worthless. Delay in this reply was caused by your not enclosing name or address with sample of comb sent.

G. R. T. (Cheltenham).—*Making Artificial Swarms.*—The weather about the date of making the swarm (May 14) was so generally unpropitious and unsuitable for the operation as to make it almost certain that "chilled" brood would result, and immature larvæ be cast out. The success in the second case may be the result of not depleting the hive so closely of its bees, but we never approve of making artificial swarms until weather is settled and warm.

J. S. (Downham).—*Loss of Queen in April.*—1. If, as stated, the hive had not been opened at all this year prior to first week in April, we can give no reliable reason for the queen's sudden disappearance, as shown by the two queen-cells and the absence of brood. The signs of prosperity seen earlier on, show that the queen was then all right, and what happened afterwards is a mystery we cannot explain. 2. You will, no doubt, find that no young bees will be dragged out, now the weather is fine. 3. The "knack" of telling when bees are carrying in honey freely will become quite easy to you after a little experience.

J. W. Cope (Chepstow).—*Suspected Comb.*—1. The frame of comb sent contained only healthy larvæ in all stages of growth, from the tiny grub just hatched onwards. We were truly sorry to see about a couple of thousand bees sacrificed through dread of foul brood because of "some brood being so small"! but there is no help for it, only please note in future. 2. The heavy loss of bee-life in April and May last was quite common, owing to the adverse weather. 3. Do not weaken your other hives by taking brood away to strengthen the one referred to; let it take its chance.

C. H. (Bristol).—*County Association Honey Labels.*—We quite agree with you that a county label issued without the usual safeguard of a consecutive number, and holding members using the label responsible for the quality of honey to which it is affixed is little more than a farce. The member who sold honey-dew with the county label on it should certainly have no chance of using the label for the future, and some notice should be taken of his conduct by the Association. To issue county labels without the consecutive number that fixes responsibility on the member is to destroy its usefulness entirely.

W. W. (Margate).—*Bees Casting Out Immature Brood.*—No doubt by the time these lines appear the trouble will have ceased. Bees sometimes cast out chilled brood after a single night's frost such as we had not many days ago.

ENQUIRER (Carlisle).—*Wild Bees. Nomenclature.*—The insect sent is the common wild bee *Andrena rosæ.* (See reply to J. H. Horn, page 224).

H. B. (Matlock Bank)—*Crippled Queen.*—The queen sent is not old but has, apparently, been a life-long cripple. The *tarsus* or foot of each of the six legs is seen to be aborted; in fact, shrivelled up; but the wings are quite perfect. No wonder, then, the poor queen, though no doubt fertilised, could only crawl about on the comb slowly and fulfil her maternal duties in such a way as caused her failure to keep up the population of the hive.

HORON (Blackpool).—*A Beginner's Queries.*—1 and 2. As a beginner only, we advise a year's experience of bees before making artificial swarms. If increase is wanted allow the bees to swarm naturally, which means increasing from one stock to three; as it is almost certain that two swarms will come off the parent hive. 3. Why do you desire to renew the queen, if she is doing well? Postpone this operation also till experience has been gained; for you cannot requeen without incurring risk of loss and failure. 4. Your proposed plan of removing queen would most likely fail. 5. Never open your hive without having a good reason for so doing. The less hives are needlessly interfered with the better. 6. The dead bees found will be one result of opening your hive too often. 7. Use naphthaline in the quantity recommended in "Guide Book." Do not try more or less. Finally, study the "Guide Book" carefully, and you will find in it replies to most questions on bees.

J. C. P. (Berkhampstead).—*Bee Association for Beds.*—The Hon. Sec. of the Beds B.K A. is Mr. L. Glasspole, Olney, Bucks.

H. F. J. (Henbury).—*Bee Parasites.*—The insects mentioned are, no doubt, a parasite known as the Braula cœca, or blind louse. It has been frequently referred to in our pages, and is illustrated on page 503 of last year's vol.

J. H. (Newport, Mon.).—*Suspected Comb.*—Comb is distinctly affected with foul brood. We regret delay in reply, but your sample got mislaid.

DESIGN (King's Lynn).—*Honey-Comb Designs.*—On sending 2½d. in stamps we will send a back number of our monthly, the *Record*, containing full instructions for making honey-comb designs.

NOVICE (Westmoreland).—*Honey Extracting.* We should like to know what "Guide Book" you possess that says "very little about honey extracting." The "Guide Book" sent out from this office devotes a whole chapter to the subject.

Several Letters, &c., are in type and will appear next week.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

WANTED, HONEY. EXCHANGE, to value, new Bee Appliances, Foundation, Sections, &c. RUSSELL, 2, Cameron-road, Christchurch, Hants. 230

WANTED, Situation as Single-handed GARDENER. Married; age 26; two children. Can look after Bees. Five years' good character. L. WOODS, Malt Mayes, Warnham, Sussex. 237

OBSERVATORY HIVE, New Design. First Prize each time shown. 25s. DYCHE, Rugby. 238

QUEENS. Only perfect and choice selected queens sent. Fertile, 4s. 6d.; Virgins, 2s. Grasmere Apiary, Ilminster. 236

GOOD NATURAL SWARMS, guaranteed healthy, 8s. 6d. and 10s. 6d. Package free. G. WEST, Railway Gardens, Spalding, Lincs. 235

SWARMS, packing and rail carriage free, 12s. Cash with order. Mrs. KIME, Mareham-le-Fen, Boston. 234

SWARMS of ENGLISH BEES at 2s. 6d. per pound. New comb honey in 1-lb. sections. E. GARNER, Broom, near Biggleswade, Beds. 232

GOOD SWARMS, guaranteed healthy, FOR SALE; also SINGLE-FRAME HONEY EXTRACTOR. WHITTING, Manea, March. 231

FOR SALE, STOCKS of BEES in Skeps near Swarming. Swarms booked for early June at 10s. each. JOSEPH SUGGITT, Daleside, Helmsley. 239

GUARANTEED Healthy NATURAL SWARMS of my well-known Strain, 4 lb. each, price 12s. 6d. Larger at proportionate rates. WHITING, Valley Apiaries, Hundon, Clare, Suffolk. 233

GOOD SWARMS of my Superior BEES, 10s., 12s. 6d., 15s., and 18s., packed free. One gentleman writes, "Your Swarm, which came June 21st last year, filled its hive and gave 37 1-lb. Sections." JOHN WALTON, Honey Cott, Weston, Leamington. 229

THE CHAMPION SCARLET-RUNNER BEAN PLANTS, 2d. score; 100, 9d. Sutton's "Mammoth" White Cos Lettuce, ditto. Leeks, 4d. 100. Also see last week's advertisement. Postages extra. WM. LOVEDAY, Hatfield Heath, Harlow, Essex.

2/2.—BEE GLOVES, as recommended by the great bee authority the Rev. Burkitt, 2s. 2d. per pair, post paid. Special terms for wholesale buyers. Manufactured by EDWARD REYNOLDS, Glove and Gaiter Manufacturer, Andover. 228

QUEEN MANAGEMENT. Splendid results. American pattern Wing Clipper, Catcher, Cage and Cell Protector. Don't attempt thumb and finger catching—see *B. B. J.*, page 122. MEADOWS, Syston. 195

PRIME NATURAL (early June) SWARMS of English BEES from my selected strain, 12s. 6d. and 15s. each, packing box, and put on rail free. Through booking to all parts. Telegrams, "Woodley, Beedon, Chieveley." W. WOODLEY, Beedon, Newbury.

Prepaid Advertisements (*Continued*).

HEALTHY SWARMS, 2s. 6d. lb.; two second-hand Hives, 9s. 6d. each. HERROD, Trentside Apiary, Sutton-on-Trent, Newark. 220

AM uniting Nuclei left over from last year. Can SPARE a FEW QUEENS, price 5s. each. W. W. PRYOR, Breachwood Green, Welwyn, Herts. 227

ENGLISH MADE HONEY JARS (1-lb. screw-cap) 14s. per gross; sample, 6d. JAS. DYSON, Stainforth, Doncaster. F.N.

23rd YEAR. NATURAL SWARMS, 10s. 6d., 12s. 6d., 15s.; '98 and '99 Fertile Queens, 5s. ALSFORD, Expert, Blandford. 186

PROLIFIC QUEENS.—Nuclei, Stocks, and Swarms. Address, E. WOODHAM, Clavering, Newport, Essex. 173

TO BE LET or SOLD, cheap, a BEE DEMONSTRATION TENT, in excellent condition. Particulars, GRIFFITHS, Hon. Sec., Wotton-under-Edge. 208

QUEENS, STOCKS, NUCLEI, and SWARMS. A few more orders can be accepted. List free. Rev. C. BRERETON, Pulborough, Sussex.

PLEASE write to SPEARMAN, Colesbourne Andoverford, for Strong Healthy SWARMS or best quality HONEY; prices very low; and satisfaction with safe arrival guaranteed; approval. 225

FOR SALE (owing to removal), 4 second-hand BEE-HOUSES, 20 ditto HIVES, mostly of the Gayton type. No reasonable offer refused. Apply, ABBOTT BROS., Southall, Middlesex.

LACE PAPER for GLAZING SECTIONS. 100 strips, 7d., 200, 1s. 2d., 300, 1s. 6d., 500, 2s. 3d., 1,000, 4s. Post free. Best quality. Neat Patterns. W. WOODLEY, Beedon, Newbury.

FOR IMMEDIATE DISPOSAL (owner over stocked) Twenty Healthy STOCKS of BEES in straw skeps, to clear £6 lot, or offers entertained. JOHN BOWES, Appleton-le-street, Malton. 202

"HONEY AND ITS USES." New edition, 1½d., 3s. 6d. per 100. "Mead, and How to Make It," 2½d. "Vinegar from Honey," 2½d. Sample bottle, 7½d. Rev. GERARD BANCKS, The Green, Dartford. 178

COMFORTABLE APARTMENTS for Brother Bee-keepers visiting Douglas. HORSLEY, Merridale House, Empire-terrace, Top of Castle Drive, Isle of Man. 183

WE LEAD, OTHERS FOLLOW.—TRANSPARENT CELLULOID QUILTS, 17 in. by 15 in. or 17 in. by 17 in. Reduced price 1s. 4d. each (post free 1s. 7d.) CELLULOID QUEEN EXCLUDERS 17 by 15 or 17 by 17. Reduced price 1s. 6d. each (post free 1s. 9d.) R. H. COLTMAN, 49, Station-street, Burton-on-Trent.

BEDDING PLANTS, best varieties; Asters, Tobaccos, Salpiglossis, Ten Week Stocks, Sweet Sultans, Nasturtiums, Cornflowers, Night Scented Stock, Giant Foxgloves, Aquilegias, Agrostemma, Malvas, Rockets, Eryngiums; any choice; 30 1s. 3d. APIARY, Egginton Vicarage, Leighton Buzzard. 200

£600.—FREEHOLD.—SEVEN ACRES of valuable MARSHY ACCOMMODATION LAND, adjoining Borough of Saltash, four miles from Plymouth. Cow-house, Piggeries. Finest spot in England for Bees. COTTAGES also FOR SALE. MORTIMER, Home Park, Saltash, Cornwall. 209

YORKSHIRE AGRICULTURAL SOCIETY.

GREAT ANNUAL SHOW at HULL,
JULY 19th, 20th, and 21st, 1899.

£2,850 in PRIZES
Will be offered for
CATTLE, SHEEP, PIGS, HORSES, JUMPING COMPETITIONS, SHOEING, BUTTER, CHEESE, BEE APPLIANCES, AND HONEY.

Entries close on SATURDAY, JUNE 10th.
Application for Prize Schedules and Forms of Entry to
MARSHALL STEPHENSON,
YORK, MAY 20TH, 1899. *Secretary.*
Telegraphic Address: "YAS, YORK."

LINCOLNSHIRE AGRICULTURAL SOCIETY'S SHOW

At LOUTH, July 13th and 14th.
(Under the Management of the Lincs B.K.A.)

PRIZES, £22 5s.
For COLLECTION of APPLIANCES (HIVES, HONEY, SECTIONS, GRANULATED HONEY, BEESWAX, SHALLOW FRAMES, AND OBSERVATORY HIVE). *All open.*
Schedules from R. GODSON,
TOTHILL, ALFORD, LINCS.
Last day of Entry, JUNE 13th.

TO LANCASHIRE & CHESHIRE BEE-KEEPERS

W. CORKILL,

16, Diana Street, Stanley Park, Liverpool.

BEE HIVES AND APPLIANCES.

Best Quality at lowest possible prices.
A Trial solicited.

TO BEE-KEEPERS IN KENT.

BEES and BEE-APPLIANCES
of best quality
SUPPLIED PROMPTLY, CARRIAGE PAID to any Station in Kent, at low prices. Our Price List, free on Application, gives descriptions of **Sladen's Sections** and other Specialities.

F. SLADEN, Ripple Court Apiary, DOVER.

A. W. HARRISON

POTTERS BAR.

One of the oldest established Houses in the Trade.
CHEAPNESS and QUALITY combined.

For Free Price List of Bee Appliances apply to
A. W. HARRISON, Potters Bar.

APICULTURE.

WM. HERROD, Expert Apiarist and Lecturer to the British Bee-Keepers' Association. W. H. is prepared to take Engagements for Lectures (either singly or a course) on Bee-Keeping, and general Teaching in connection with the promotion of Technical Education for County Councils; also Lectures and Demonstrations with live bees at Agricultural and Flower Shows, &c. Apiaries managed by the day or season in any part of the country. Large number of lantern slides illustrating most improved methods. Practical instruction in bee-management given to those desirous of taking up bee-keeping. Hives examined and valued for purchase.
CANDIDATES COACHED FOR EXPERTS EXAMS.
W. H. being about to start on spring cycle tour of inspection to Kent bee-keepers, ARRANGEMENTS may be made for a PUPIL to travel with him.
For Particulars and terms, address,
W. HERROD,
HORTICULTURAL COLLEGE,
Swanley, Kent.

BEE -APPLIANCES -HIVES and -KEEPERS' WOOD.

Illustrated Catalogue Free.
E. J. BURTT, Manufacturer, **Gloucester.**

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held at 105, Jermyn-street, S.W., on Thursday, June 1, Mr. Till occupying the chair. There were also present Miss Gayton, Messrs. R. T. Andrews, R. C. Blundell, H. W. Brice, W. Broughton Carr, W. H. Harris, J. M. Hooker, H. Jonas, J. H. New, A. Seth-Smith, E. Walker, F. B. White, and the Secretary.

The minutes of the previous meeting were read and confirmed.

The following new members were elected, viz.:—Mr. Henry A. Blackburn, Lion House, Wealdstone, Middlesex; Mr. A. Garnwell, Norbury Hill House, Norwood, S.E.

The report of the Finance Committee, giving particulars of receipts and expenditure to May 31, was received and adopted.

Mr. W. H. Harris, on behalf of the Education Committee, reported that the Examiners of Candidates for First Class Expert Certificates recommended that passes be granted to the Rev. Sidney Smith, Wheldrake Rectory, York, and to the Rev. W. H. A. Walters, Treffgarn Rectory, R.S.O., Pembrokeshire. The report was approved.

Mr. Till explained to the Council certain alterations which the Exhibitions Committee proposed in the prize schedule of the forthcoming Dairy Show (Honey Classes) and the recommendations were accepted subject to approval in due course by the Council of the British Dairy Farmers' Association.

A number of letters in respect to a reported sale of diseased bees by an expert of the Association (as agent for the owner) were read by the Secretary. After fully considering the correspondence it was resolved on the motion of Mr. Harris, seconded by Mr. New, to offer to appoint a Board of Arbitrators consisting of five members of the Council, to go fully into the evidence furnished by the parties to the transaction in question, with the object of preventing recourse to the law for settlement of the dispute.

The Secretary was instructed to inquire of each member of the Council whether Thursday or Friday be preferred for future meetings and to report the result of the ballot at the meeting fixed for Thursday, July 6.

The final arrangements in regard to the "Royal" Show were reported upon and considered satisfactory.

BEE AND HONEY SHOW AT WINDSOR.

The annual exhibition of the Royal Counties Agricultural Society, of which her Majesty the Queen is President for the present year, was held at Windsor on June 5 and three following days. Favoured with magnificent weather, the success of the Show was assured, while the bee and honey department, being placed under the management of the Berks B.K.A. (of which H.R.H. Princess Christian is President), was a very successful feature of the Show.

A tent was erected to the right of the main entrance, and this was well filled with all kinds of honey and wax. A large number of flowers were sent by Sir Francis T. Barry, Bart., M.P., Baron Schrœder, and Messrs. Sutton & Son, and these, when arranged by Miss Egginton, the hon. treasurer, added greatly to the effectiveness of the display. Her Royal Highness Princess Christian visited the bee department on Tuesday, accompanied by Prince Christian and the Duke and Duchess of Connaught. They were received by the Rev. R. Errington and shown round the tent. Princess Christian intimated that she was very pleased with the honey and appliances. Her Royal Highness was presented with a basket of honey by Miss Egginton, which she graciously accepted, and at Princess Christian's request a specimen of Mr. Seymour's first prize extracted honey was presented to the Duchess of Connaught. For a show held so early in the season the display of honey was declared by the judges to be very good indeed, and the staging of the whole was worthy of all praise. Collections of appliances were shown by Messrs. Greenhill, Lanaway, Cotlman, and Goddard. Nearly the whole of the prize exhibits in the honey classes were purchased by Messrs. Stevens and Harris, of Eton. Interesting and instructive demonstrations on practical bee-keeping were given in the bee-tent by Mr. R. Green.

The Rev. R. Errington and Mr. P. Scattergood were appointed judges, their awards being as follows:—

Collection of Hives and Appliances.—1st, J. T. Greenhill, Wimbledon; 2nd, T. Lanaway & Sons, Redhill.

Observatory Hive with Bees.—1st, J. T. Greenhill.

Complete Frame-Hive for General Use.—1st, Lanaway & Sons; 2nd, T. A. Flood, Reading.

Frame - Hive for Cottager's Use. — 1st, Lanaway & Sons; 2nd, R. W. Coltman, Burton-on-Trent.

Twelve 1-lb. Sections (any year).—1st, W. Woodley, Beedon, Newbury; 2nd, A. D. Woodley, Caversham; 3rd, W. Dunning, Hawnby, Yorks.

Six 1-lb. Sections.—1st, J. Stewart, Rainham, Kent.

Twelve 1-lb. Jars Granulated Honey.—1st, H. C. Hawker, Longparish; 2nd, J. Berry, Llanrwst; 3rd, E. E. Schofield, Newton Abbot.

Twelve 1-lb. Jars Extracted Honey.—1st, J. Stewart, Rainham; 2nd, E. C. R. White, Romsey; 3rd, R. Brown, Windsor.

Twelve 1-lb. Jars Liquid Honey (gathered prior to 1899).—1st, R. Dutton, Witham,

Essex; 2nd, H. W. Seymour, Henley-on-Thames; 3rd, J. Sopp, Crowmarsh, Wallingford.

Best Display of Honey.—1st, W. Woodley; 2nd, H. W. Seymour.

Display of Extracted Honey (any year).—1st, H. W. Seymour.

Beeswax.—1st and 2nd, J. Berry; certificate, Dr. Sharp, Brant Broughton.

Useful Invention—1st, no award; 2nd, R. W. Coltman.

Collection of Honey and Wax (in applied form).—1st, H. W. Seymour.

Mead.—1st, H. W. Seymour; 2nd, A. D. Woodley.

Honey Vinegar.—1st, H. W. Seymour; 2nd, M. Killner, Billinghurst.

Educational Exhibit.—1st, Dr. Sharp; 2nd, H. W. Seymour.

LOCAL CLASSES.

Twelve 1-lb. Sections (any year).—1st, W. Woodley; 2nd, G. Head, Winkfield; 3rd, A. D. Woodley.

Six 1-lb. Sections (any year).—1st, no ward; 2nd, H. Cox, Ascot.

Six 1-lb. Sections.—1st, H. W. Seymour; 2nd and 3rd, no award.

Twelve 1-lb. Jars Extracted Honey (any year).—1st, H. W. Seymour; 2nd, A. D. Woodley; 3rd, W. Woodley.

Six 1-lb. Jars Extracted Honey.—1st, H. W. Seymour; 2nd, R. Brown, Windsor.

Design in Comb Honey.—1st, G. Head; 2nd, H. W. Seymour.

Beeswax.—1st, H. W. Seymour; 2nd, G. Head.

Best Amateur Made Hive.—1st and 2nd, A. Camden, Reading; 3rd, W. J. Tywill, Staines.

ESSEX BEE-KEEPERS' ASSOCIATION.

ANNUAL SHOW.

The Annual Show of the Essex B.K.A., took place at Epping on Friday and Saturday, June 9 and 10, in conjunction with that of the Essex Agricultural Society. The exhibition was favoured with beautiful weather on both days, and a good attendance resulted. The E.B.K.A. made a bold bid for securing a good entry by offering sixty-seven prizes in twenty-six classes varying in value from £3 to as many shillings, and it was regrettable that, owing to the early date of the show, a keener competition did not follow. As it was, however, some nice honey was staged, but the bulk of the prizes deservedly went to those few exhibitors who supported the executive, and did their best to make a good display.

Considering that the show was held almost before honey of '99 had begun to come in, an attractive, if small, display was made.

Mr. W. Broughton Carr officiated as judge and made the following

AWARDS:—

Collection of Hives and Appliances.—1st, Jas. Lee & Son.

Frame Hive for General Use.—1st, Jas. Lee & Son.

Amateur Made Hive.—1st, F. G. Kimber; 2nd, G. R. Alder.

Observatory Hive, with Bees.—1st, Wm. Loveday.

In classes 129, 130, and 131, for twelve, six, and three 1-lb sections respectively, none of the thirteen entries were staged.

Twelve 1-lb. Sections (any year).—1st, F. G. Kimber.

Six 1-lb. Sections (any year).—1st, W. Loveday; 2nd, W. Parris.

Three 1-lb. Sections (any year).—1st, W. Loveday; 2nd, F. G. Kimber.

Three 1-lb. Sections (any year), Local Class.—1st, H. Bassett; 2nd, F. G. Kimber.

Single 1 lb. Sections (any year).—1st, W. Loveday; 2nd, F. G. Kimber.

Shallow-frame of Comb Honey.—1st, H. Bassett.

Twelve 1-lb. Jars Extracted Honey.—1st, H. Bassett; equal 2nd, W. Parris and W. Loveday.

Six 1-lb. Jars Extracted Honey.—1st, W. Loveday.

Three 1-lb. Jars Extracted Honey.—1st, W. Loveday.

Twelve 1-lb. Jars Extracted Honey (any year).—1st, W. Loveday; 2nd, F. G. Kimber.

Six 1-lb. Jars Extracted Honey (any year).—1st, W. Loveday; 2nd, H. Bassett; 3rd, O. Puck.

Twelve 1-lb. Jars Granulated Honey.—1st, W. Loveday; 2nd, O. Puck.

Single 1-lb. Jar Extracted Honey (any year).—1st, W. Loveday; 2nd, H. Bassett; 3rd, O. Puck; v.h.c., W. Parris.

Display of Honey.—1st, W. Loveday.

Bees-wax.—1st, Jno. Berry; 2nd, C. S. Wadey; 3rd, W. Loveday; v.h.c., F. J. Carter and H. Bassett; com., W. Parris.

Useful Invention.—1st, W. J. Sheppard.

Instructive Exhibits.—Equal 1st, A. W. Salmon and F. G. Kimber.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of May, 1899, was £5,346.—*From a return furnished to the* BRITISH BEE JOURNAL *by the Statistical Office, H.M. Customs.*

CONTROLLING SEX IN BEES.

CONTROL IN THE FORMATION OF SEX.

The editors of this JOURNAL (on page 202 of the issue for May 25) requested a few lines from me with reference to what I stated in my lecture before the members of the Jersey Natural Science Association on the subject of "Controlling Sex in Bees." I lectured during two hours on a great variety of matters apper-

taining to bees, their habits, uses, &c. But the subject on which I spoke mainly, while the egg of a bee was pictured on the screen, was that of "The effect of checks on the sex of the egg." The remarks which I made were somewhat as follows :—

"Bee-keepers are able, in a measure, to regulate the production of drones in the hive, and cause the queen to produce almost entirely worker female bees, with but a small percentage of drone or male bees. This is effected to some extent by having almost all worker comb in the hive and only a small amount of drone comb. And I consider that bee-keepers have paid more attention to this matter of the production of sex, and that they have obtained better results than the breeders of other stock generally. I have been able to keep my hives for several years past from swarming, and producing but very few drones per hive, while in worker bees or female nurses, my colonies have been exceedingly strong. This has been achieved by noticing that drones were produced, and swarming also, when the queen in full 'lay' received severe checks; these 'checks,' at such a time, I distinctly noticed, produced drones or male bees, while freedom from checks, which enabled a queen to go through her laying season, produced female workers only, with but very few males. If, therefore, bee-keepers can govern the production of males at will, the breeders of other stock ought to be able to do the same if they know the law that affects the produce of male and female.

"Fowl fanciers can induce birds to lay very early in the season, and ensure that a fair percentage of the eggs are fertile; but such eggs mostly produce cockerels, and the more fertile the hen the greater the percentage of cockerels. Now if we notice that checks are much more likely to be produced early in the season, when the weather is more variable than later on, and that these changes of temperature would chiefly affect the fowls whose ovaries were the most developed, we get at the reason why eggs set early produce a preponderance of male birds.

"The queen wasp gets in full 'lay' more towards the fruiting part of the year than does the queen bee, and at such time cold nights begin to set in, and greater atmospheric changes take place than during midsummer. This has the effect of causing her to produce some drone eggs while she laid only worker eggs previously. Animals generally are more equal in the production of males and females than bees and wasps. On the other hand, the queens of bees and wasps, although their ovaries are far more largely developed than those of other animals, and would be thereby more liable to be affected by checks, yet they are better protected against outside influences than animals generally. The mother-bee, like the mother wasp, is in the midst of a full colony of her own progeny, which becomes an increased protection in proportion as the maternal ovaries become developed; secondly, they are fed with a food that can be made to produce but little variation in its influence; thirdly, they have the protection of the combs to guard them against sudden changes of temperature, and the combs of each of these insects, although so widely different in the material of which each is composed, yet both are recognised as among the best non-conductors of heat and cold; fourthly, the hive in which they breed is so protected from extremes of temperature as to retain the warmth of the brood-nest in a very great degree while the queen bee is extensively employed in egg-laying. Other animals, while less fertile, are at all times far more exposed to outside influences, and this may in some measure account for their producing a more equal number of males and females than the two insects cited. I infer, therefore, from these observations, and others of a like nature, but all giving indirect evidence, that checks can, and do, affect the production of sex in the egg prior to fertilisation, or at the time when the egg is ready for that purpose. More direct evidence, however, could, I think, be obtained by experimenting with the eggs of animals, such as frogs and fish, whose eggs are fertilised only after being laid."

The above is, in substance, what I said in the lecture referred to on the subject of checks in producing sex. But I also briefly explained my views with reference to eggs and the influences to which they were subject so far as receiving checks, as they matured ready for being fertilised. It has long been observed with reference to some fish, that when the females experienced difficulty in reaching the spawning ground, the eggs spawned produced a far greater number of males than females. A passage on "Fish Culture" in one of the editions of "Cassell's Technical Educator," which serves to give an example of this, reads thus :—

"Artificial spawning for salmon is very simple. All that is required is to obtain as many female fish, or spawners, as are deemed sufficient to produce spawn enough to restore the river. Some works of pretension tell us that the males are more scarce than the females; but experience and observation teach us the remarkable fact that, amongst all salmon and trout spawning beds, the contents of the nests will be found to contain seven cocks to one hen. This is the more to be observed in those rivers in which the weir stops the fish from ascending into the more ample and more natural—and, consequently, more acceptable—spawning ground. In the pools of such weirs they crowd together, and as the fish cannot hold their spawn when fully ripe, they fight and hustle each other for an appropriate place; and in this way not only are the ova scattered about, and in most instances entirely wasted, but the fish are much injured by fighting, and seldom or never (as is well known with most fish) recover even

from the slightest bodily flesh wounds. Hence the great importance of salmon ladders to admit of their reaching a greater field of operations in which they may begin and finish their interesting and profitable duties without hindrance or molestation."

The law which appears to govern the formation of sex—so far as checks are concerned—may be stated as follows: An egg which is fertilised free from check produces a female. In other words, a female is formed from an egg that has received no check in its fertilisation when (or just prior to) being fertilised.

The following rules may also be stated with reference to the working of the law just cited: (1) A female (mother) may be predisposed by anterior checks to produce males. (2) A recent check exerts its greatest force, if received when the ovaries are nearing (or have just reached) their greatest development for egg production. And, also, the more the ovaries have been favoured towards extensive development, by prevailing favourable conditions, the greater is the effect in the direction I have indicated.

The eggs laid by a virgin queen clearly show the effect of an absolute check in producing males. When these eggs were ready for being fertilised, none of the elements necessary for the purpose were present; and they therefore received an absolute check, so far as fertilisation, but possessing of themselves the necessary vitality to produce bee-life, but males only.

The eggs of a fertile queen-bee are free from check, and in consequence produce females. On the other hand, when she lays eggs that have received an absolute or extreme check, they are non-fertilised, and produce males that resemble the mother only. She also lays eggs that have received a check sufficiently powerful to prevent them forming females, but that admits of their being fertilised with male semen; they then produce males in more or less degree resembling both parents. This latter case, which had not hitherto been solved, presents new interests, not only for the explanation it affords of the effects produced by the check described in the present instance, but because the effects of this check are also common to the eggs of animals generally. The effects produced by this check are therefore important to breeders of farm stock, or of domestic or pet animals, and also to fish breeders, as well as to bee-keepers; in fact in every case where it may be desirable to specially produce females, or males, of any variety.

To control the formation of the sex in the egg at will is a science of itself, and some of the details to be attended to must be special to, and necessarily vary, with the kind of stock dealt with. — PETER BOIS, *Jersey*, *June* 10.

[We thank Mr. Bois for so promptly responding to our request for fuller particulars of his interesting lecture.—EDS.]

A NEW UNCAPPING KNIFE.

A short time ago we were waited upon by the representative of a London firm of manufacturing cutlers with regard to their producing a knife for uncapping combs similar to the one used by ourselves, and shown in a sketch (familiar to most readers) used to illustrate an article on uncapping combs which appeared in our pages several years ago. As a result of the visit mentioned above, a knife has been made and registered under the title of the "W.B.C. uncapping knife." The sketch, fig. 1, shows the knife, fig. 2 serving to explain the outward bend of the blade at top.

With plenty of practice at uncapping combs in years gone by, we never took kindly to the various types of knife used for the purpose, and so, after full trial, the "Bingham" and others

Fig. 1.

Fig. 2.

were cast aside, and we reverted to the old and well-worn "carvers" adapted by ourselves to best serve the purpose intended. One of these served as the model from which the knife under notice was made; and if the unanimous opinion of all who have so far seen it, as perfected, is worth anything as corroborative of our own view, the W.B.C. knife is likely to become popular as enabling bee-keepers to uncap combs without breaking down the cell-walls, and thus rendering clean and rapid extracting difficult and unsatisfactory.

In order to save both trouble to ourselves and those wishing to try the knife in question, it may be well to say that the writer has no pecuniary interest whatever in its sale, nor can it be had from this office; and the makers do not sell it retail. Any appliance dealer can supply it, and the price, we believe, is 3s. or 5s. 6d. per pair. W. B. C.

UNCAPPING COMBS FOR EXTRACTING.

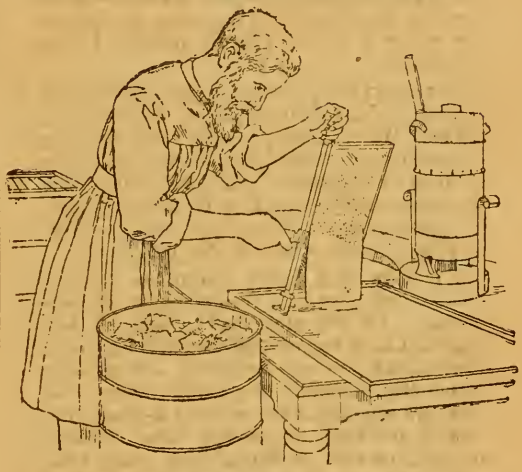
As a practical supplement to the notice of "A New Uncapping Knife" it may be useful to reprint a portion of the article which called it forth. We do this mainly because of the vague notions among the ordinary run of bee-keepers as to uncapping before the annexed sketch—taken from life over a dozen years ago—appeared in print. After detailing certain preliminaries in regard to extracting, we went on to say:—

Nothing so much aids us in this part of our bee-work as *good tools*. Ours consist of an extractor, holding four combs; a "strainer and ripener," the upper or movable portion of which is of sufficient capacity to hold five or six gallons of water, and will, of course, contain a great quantity of cappings, from which the honey is day and night gradually dripping through the sieve into the receptacle below. It seems incredible how the honey drains through; but it does in time, and so none is lost. Then we have a lamp "knife-heater;" a couple of keen-edged old carving-knives, with blades about 10 in. long, the points of which are curved outwards for about 1½ in.; a wooden "tray," with a raised edging ½ in. high all round it, and near the left corner a couple of small pieces of wood nailed on so as to form an angle or rest, so—L—to keep the frame from slipping. Finally, we have a brown holland "blouse," which slips over and protects the clothes. A bowl of clean, cold water for dipping the hands in, and a towel complete our "kit."

Thus equipped, and with the boxes of honey piled one above the other, we prepare to start. First, with a pencil, we consecutively number the combs in each box, so that they may be replaced in the same order as built by the bees—experience will show the wisdom of doing this.

The annexed sketch explains the manner of holding the comb while uncapping. With a sharp knife just withdrawn from *hot water*, and a shallow comb held as in the sketch, the whole sheet of wax capping may, with a little practice, be removed at one cut, without bruising or breaking the cell walls in the least. This is an important point, because, if the cells are damaged, the honey will not freely leave the comb as the cage of the extractor revolves.

The operator, grasping the "lug" of the top bar firmly in his left hand, places the lower end in the "rest," a knife is lifted from the hot water, and, after touching the blade with the towel to remove the drip, he leans the frame forward so that the sheet of capping as it is severed hangs clear of the surface of the cells, as seen in the sketch. When cutting, do not give the knife too much of a "sawing" motion, and endeavour to keep the blade just beneath the surface of the capping; when the top of the comb is reached, the capping will adhere to the knife long enough to allow you to drop it smartly into the strainer close by your right hand, ready to receive it. Stroke both sides of the knife-blade on the edge of the strainer to remove the adhering honey, and replace it in the hot water. We never use the same knife for uncapping more than one side of the same comb. It takes far less time to do the job than to describe how it is done; but to do it well requires both care and practice. There must be no "dragging" while the knife is passing upwards, or the cell walls will be all bruised in its passage, and, as before stated, the honey will not flow freely. As each comb is uncapped it is placed in the extractor, and when the four are inserted we at once start, using no care whatever as to speed, and giving no heed to the usual precaution against fracturing the combs by the too rapid revolution of the cage. Neither do we ever think of troubling to



Uncapping Combs.

partly extract one side of heavy combs and then reverse them, only to turn them again before completing the extracting, as is so often advised. These precautions *may* be necessary when working with Standard frames; with shallow frames no such care is needed. Our extractor has cog-gearing, and we get up top speed at once. Less than a couple of minutes suffice to extract one side of the combs, when they are reversed, and the operation is repeated till all the frames have been gone through.

When the space below the cage is full of honey, the extractor is raised up on a box high enough to allow an earthenware "bread-mug" being placed below the valve tap. These mugs each hold about 100 lb. of honey, and when a piece of book muslin—not too fine—just wrung out of clean, cold water, is stretched over the mug, the tap can be so regulated as to run just as fast as the honey will strain through; it therefore needs no watching. As the mugs are filled a clean cloth is tied over

each; they are then labelled and set aside in a warm place ready for bottling off after extracting is completed. When this is done, the cage is removed from the extractor, the cylinder being washed out to remove all wax chippings, and it becomes a vat for bottling purposes. W. B. C.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondent are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

THE SOLAR WAX EXTRACTOR

MAKES A GOOD "HONEY-RIPENER."

[3709.] I am not going to be remiss sending an echo for "Scotland yet," and a re-echo from Auld Reekie and his Solar extractor. I can fully endorse your correspondent, "W. R. N., Sussex" (page 186), whose experiences with "wire gauze" and "tiffany" are not very encouraging. I use neither, for I set my melting-tray at a very small angle, so as to allow the melted wax to percolate slowly, and not at a rush. I now obtain a pure wax of a guinea-gold colour, and likewise empty old combs of last year of all their honey, and also ripen the extracted honey, if it should require evaporating, by allowing the extract to remain in the receiver until evening, when it will cool, when the wax can be taken from off the liquid honey and washed, previous to re-melting later on. I do not use anything galvanised; I think it objectionable, as honey has formic acid in its composition. Tin is preferable to all, if it be *good* tin.

I am throwing out an hint for "E. W. Carbines" (3707, page 222), that he has got a "new honey-ripener," and is not aware of it; and that old comb containing honey or wax can be run out. This, of course, it will not do in an honey extractor, as it cannot be used. Again, the wax is rendered beautifully bright, and without a particle of pollen, and, of course, no aroma by decoction, with the choice of ripening if necessary.

I do really consider the solar wax extractor to be a real and permanent advantage to the cottage bee-keeper, realising in one article, simple and effective, the cumbersome machinery of three others.—AULD REEKIE, *June* 10.

A SUDDEN HONEY-FLOW.

[3710.] After the long spell of adverse weather we have experienced in this part o Yorks, which threatened something like a bee-famine, the sudden honey-flow of the last few days has been almost startling! It has also proved an exception to the general rule according to which stocks taken to the moors always come out worst in the following spring. Speaking for myself, I can say that the contrary is the case in my apiary, for every one of my strongest hives at present were at the moors last autumn, and in all of them the bees have entered the surplus-chambers recently given in marvellously quick time compared with their usual habit at this season in the north. On May 29 I found only newly-gathered honey in any of the stocks ready for supers. No old or sealed stores at all. On the 30th I gave several racks of sections, and the bees had stored a good quantity of honey in twenty-four hours later. On June 2 the bees of every stock to which I had given supers were at work in them as hard as they could. I suppose it was the sudden warmth and sunshine that caused the rush into section-racks, for so lately as May 27 I was actually feeding the bees by pouring syrup from a can into outside frames of empty comb. After bees had stopped flying for the day, I found that this method of giving food caused less risk of robbing than open-air feeding brought about when I tried it.

We have already heard of several swarms in the last few days, which is early for the north. They were mainly from skeps. But there were a good few hunger-swarms at beginning of May. At the beginning of the month I had two of these wandering lots come to me, and one of them I hived on some shallow-frames of comb filled with the honey-dew of '98. Both of my hunger-swarms, however, are now doing first-rate. All they wanted was food. Wishing equal success to all readers.—C. B. ELMHIRST, *Knaresborough, June* 5.

PREPARING BEES FOR THE MOORS.

[3711.] I quite endorse what Mr. Grimshaw says (3705, 220) about those "Japanese puzzles" sections *versus* shallow-frames; it is the best name for sections I ever heard, but the difficulty is packing shallow frames for transit and subsequent sale. If the public could be educated to buy the honey in jars, it would be better. I adopted a plan that was fairly successful. I inserted a few hanging frames containing partly worked-out sections between the shallow frames, placing them in after the bees had partly filled the shallow frames, and Mr. Howard has a new style of narrow section to hang in a shallow frame; but I would prefer two well-filled frames of clover honey, and the remaining frames crammed with brood to feeding with syrup in case the bees removed some of the latter upstairs. My prescription would be: Young queens—*i.e.*, of current year—plenty of hatching brood, and enough clover honey to tide them

over a few days of adverse weather. I was certainly successful with this plan last season. —ALPHA, *Hull, June* 9.

WAX MOTH.

[3712.] I fancy, Mr. Editor, that you can scarcely be aware of the pest which the wax moth has become in East Anglia during the two last seasons. You stated recently in a note that if the hives are strong there is little fear of the wax moth, but our experience is different. Even in hives overflowing with bees (as most of mine are) the wax moth breeds on the top frames, and if the board used as a divider is not cleaned occasionally it may form a breeding-place for this troublesome insect. Some of our honey supplied to customers and kept for a time by them, appears to have been injured by the wax moth, and our Essex expert reports that this nasty little creature is the pest of East Anglia at the present time. We are adopting Mr. Burkitt's hint kindly given us not long ago in the JOURNAL, and are squeezing putty into all the crevices on the top frames of the combs. We are confident that this plan will meet our difficulty, but, of course, it is important that the hives should also be thoroughly strong in bees. Others may have tried different plans and the matter is one on which (as it seems to me) we want more light. The expert last season stated that some apiaries had lost several hives from its devastations, and I lost more than I care to name through honey injured or tainted by its presence.—E. BARTRUM, D.D., *Wakes Colne Rectory, Essex.*

THE COMING HONEY SEASON.

A GOOD START.

[3713.] As I have not seen a "note" for '99 from this district in the B.B.J., I make bold to send one, which I hope will possess a little interest for your readers.

At the end of April I commenced enlarging brood nests of my four stocks (all good ones wintered on six or seven frames) by uncapping and inserting in centre of brood-nest a frame containing sealed food, one a week. On May 27 (very warm day) as the bees of two of the hives were "hanging out" and drones flying, I made an artificial swarm from each of them; providing swarms with frames fitted with starters only and putting one super on each hive. Since then weather has been warm and honey has come in fast, and last Friday (just under the week) these two supers (sections) were well on for completion, so I put another rack *on top* of each. This (Saturday, June 10) afternoon I have put super-clearers under two racks of fine heavy sections, nearly all being fully sealed, even to the outside ones.

I think you will say that I have been fortunate in securing so early a "take," but, of course, the weather has been grand, and the country is simply full of fruit blossom, trifolium, &c. If rain does not soon come, however, there will be very little white clover about. People here were very jubilant at the prospect of rain last evening. The wind got down to S.W. and rain came up rapidly, some was falling away seaward, but in about two hours it flopped round to N.E. and to-day it is dull and cold.

I saw a hive yesterday with honey running out at entrance. Got leave to examine it. Bees been wintered on five frames, dummies left out. Bees had built new combs in vacant space, fastening same to under side of quilts. Gradually increasing weight pulls quilts in. Result: complications, colloquialisms; then "robbing" set up! Owner is a bee-keeper (?). —E. P. G., *Broadwater, Worthing, Sussex, June* 10.

INTRODUCING QUEENS.

DO BEES KNOW A FERTILE QUEEN?

[3714.] Just lately I had occasion to introduce a queen to a lot of bees, which queen turned out to be a drone breeder; and on acquainting the dealer with this fact he very promptly replaced her with another, a good example for others to do likewise.

On June 9 I took out the drone breeder, put her in a cage, and laid her on the quilt which only partly covered the frames. In a very few minutes it was noticeable that the bees missed their queen. I then happened to put the cage containing the newly-arrived queen on the top of the frames, when the cage was almost instantly covered with bees, while the poor drone-breeder was entirely deserted.

This roused my curiosity, and in order to satisfy it I took up both cages, brushed the bees off, and in a minute or so laid them both quietly on the quilt again. The result was exactly the same as before.

I do not know whether you have noticed the same thing. I expect you have; but in case it might interest some of your readers I write this.

To me it seems wonderful that the bees should have such instinct as to know—as they evidently did in this case—the difference between a worthless and a valuable queen while in their cages.—F. D. H., *East Cowes, I. O. W., June* 12.

[Every bee-keeper of experience knows that bees will accept a fertile queen more readily than an unfertilised one. The above incident is very interesting as clearly showing this.—EDS.]

Queries and Replies.

[2219.] *Superabundant Pollen.*—I have now been a bee-keeper for five or six years, and at present have nine stocks on nine, ten,

and eleven combs, with seven, eight, and nine combs of brood respectively, and all strong in bees. This spring I have done no bottle feeding, but occasionally, as I thought it was needed, have given the bees a comb of uncapped stores or a comb filled with syrup, during April, behind the brood-nest; and in May have given the same in the middle of the nest. This has been all the stimulating I have so far indulged in, and my stocks have come on wonderfully well, so well that I was in hopes of a good harvest, but duriug the last ten days or so an enormous quantity of pollen has been gathered; so much that the one or two combs in front have not sufficed to hold it. Consequently, it is being stored in all the combs, and even in the very centre of the brood-nest. Directly a bee hatches out the bees fill in the vacated cell with pollen; so that the queens are laying outside the pollen and anywhere they can find an empty cell in which to put in. Most of the pollen goes in the combs on the side next the entrance (my frames hang parallel to entrances), and not quite as much on the rear side, but I have never seen anything approaching to the state into which my hives are fast getting; it is not one or two combs, but as near as possible every comb is being pollen-choked. Honey, too, has been coming in fast during the last few days, and the upper cells in combs are being drawn out. I have put supers on three stocks, but I fear mischief and swarming, as the queens are being rapidly shut off from space in which to deposit their eggs. The whole of my nine stocks are going just as described.

Will you please advise me what is best to be done in next issue of the B.B.J.? Would it answer to put a few of them on as a super to be filled on the top of the pollen and sealed, to be used in the autumn as store for wintering? I shall be thankful for any advice, as this is quite a new experience for me.—W. C., *Southport.*

Reply.—The best remedy we know of—if the mischief has not abated—is to remove a few of the pollen choked combs and replace them with frames of foundation. It is more than probable, now that honey is plentiful, pollen gathering will be considerably reduced and that the trouble complained of will be over.

[2220.] *Robbing and Suffocation.*—1. I am sending a piece of comb and a few dead bees, and shall be much obliged if you can afford me any information as to the cause of an apparently strong hive of bees dying off in two or three days? About ten days ago nothing unusual was observed, but on May 30 I found the body-box choked up with dead bees and only a few live ones left inside, all of which have since died. At another hive, about a couple of yards from the above, I also found more than half the bees dead! Fighting was observed at both hives about a week ago. I ought to say that on the 7th ult. I had a look at both hives, which then appeared to be fairly strong, with a good quantity of brood and some honey in cells. No honey was removed from frames in brood-chambers of my hives last year and they were not fed during winter or spring. 2. There is a strong lot of bees in roof of house near where the hives stand; would they attack the bees in hives?—J. C. P., *Berkhampstead, June* 3.

Reply.—1. We incline to the idea that the hive entrance has been contracted too much, and that the excitement of robbing has caused a "block" resulting in suffocation. Is this a likely thing, or have the bees died of famine after being robbed of all their stores? 2. They might; but from a distance, of course, we cannot say whether they did or not.

[2221.] *Swarms Uniting of Themselves.*—On May 29 I had a large swarm of bees, and drove them into a hive of my own make holding eight frames. On the following day another swarm came off and entered the same hive, and now it appears to be full to overflowing—a great number of bees hanging about the alighting-board all day long. 1. Had I better add a super? 2. If so, when the super is removed at the end of the season will the hive winter all the bees, both of itself and the super? I am only a novice.—W. Barrett, *Bodmin, June* 8.

Reply.—1. The bees need supering at once. 2. Yes; there will be ample room for wintering the bees. But why make the hive to hold only eight frames? If they are of ordinary standard size the brood-nest should take at least ten frames.

[2222.] *Packing Live Bees for Transit.*—I purchased two stocks advertised, and they came in strong wooden boxes with fixed combs, but there was over a quart of dead bees in one stock, through what I consider utterly unsuitable material being used to confine the bees—viz., coarse sacking. I asked the advertiser to confine them with cheese-strainer cloth, as I expected skeps. Had this or, better still, perforated zinc been used, no harm would have come to the bees. As it is the stock is seriously weakened. Clearly the seller is responsible in such a case, and will, I hope, make compensation. The bees were released the same day they were confined. I enclose a piece of the material used. What says the Editor?—Alpha, *Hull.*

Reply.—No doubt the material known as cheese-cloth, being of far more open texture than the sacking sent, would have been more suitable than the latter; but if there was no ventilation at top and the hives travelled without turning bottom-up, we rather wonder at the loss being so small in such weather as now prevails. We can offer no opinion as to "compensation" without hearing the other side of the case or receiving fuller particulars.

[2223.] *Endeavouring to Cure Foul Brood.*—Shall be glad to have your opinion with regard

to the hive from which I sent you the piece of comb containing foul brood. When I got your reply in B.J. of June 1 (page 218), I looked at every comb in the hive (which contained eight), and found eggs and brood in six of them, along with larvæ in all sizes, also sealed brood, and a number of young bees which seemed to just have hatched out. All looked healthy. I united the bees—which were on four combs—to the queenless stock on May 19, and the comb sent to you was cut out of one of the remaining ones left in the hive having the queen. Both hives had been fed with syrup (medicated according to "Guide Book") since middle of March up to the time of writing. Having over twenty stocks of healthy bees—for anything I know to the contrary—would you advise me to destroy this one, or try it a a little longer to see if it does all right? It is the first time I have had any experience with foul brood, and hope it will be the last (when I get clear), but am afraid not, as in my neighbourhood a number of ekeps are kept, some of which have not been lifted off their stands for the last five years, and I may say these skeps are always in a weak state. Thanking you for reply to my last query.—R. N., *Westmoreland, June* 5.

Reply.—If we may take it that the four combs contained no cells like those in comb sent, it may be worth while, under present fine-weather conditions, to give the united bees a trial during three or four weeks to come. If, however, at the end of that time, dead brood is found, we should destroy everything save bees, and treat them as a swarm. It may be that the source of disease is in the combs left in the old hive when uniting, therefore we should in any case destroy the four combs referred to.

METEOROLOGICAL

Observations taken at Duddington, Stamford, Northants, for the Week ending June 10, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
June 4....	30·21	68·5	80	43	37	60·2	—
,, 5....	30·25	70·0	81	48	33	63·3	—
,, 6....	30·31	67·0	80	51	29	64·5	—
,, 7....	30·33	67·3	72	54	18	62·4	—
,, 8....	30·44	52·3	57	48	9	52·2	—
,, 9....	30·44	54·1	62	47	15	54·0	—
,, 10 ...	30·37	52·1	68	48	20	57·3	—
Means	30·34	61·6	71·4	48·4	23·0	59·1	—

Mean vapour tension, 0·369 in.; mean relative humidity, 66 per cent.; mean temp. of the dew point, 50°·0. For the week ending June 3, the mean temp., viz., 53°·4, was −1°·1, and the rainfall, viz., nil, −·53 in. The rainfall, January 1 to June 3, viz., 8·83 in., is −·32 in., and the mean temp., viz., 43°·6, +0°·6.

Fred. Coventry.

Duddington, Stamford, June 12.

WEATHER REPORT.

Westbourne, Sussex.

June, 1899.

Rainfall, ·88 in.
Heaviest fall, ·29 in., on 19th.
Rain fell on 8 days.
Below aver., 1 in.
Maximum Temperature, 67°, on 31st.
Minimum Temperature, 30°, on 5th.
Minimum on Grass, 24°, on 4th.
Frosty Nights, 2.
Sunshine, 253 hrs.
Brightest day, 31st, 15 hours.
Sunless Days, 1.
Above average, 7·3 hours.
Mean Maximum, 57°.
Mean Minimum 41·2°.
Mean Temperature, 49·1°.
Below average, 2·8°.
Maximum Barometer, 30·56°, on 28th.
Minimum Barometer 29·38°, on 15th.

L. B. Birkett.

Bee Shows to Come.

June 19 to 23 at Maidstone.—"Royal" Agricultural Society's Show. Bee and Honey Section under management of the B.B.K.A.

June 30 at St. Ives.—Hunts B.K.A. annual show of honey, hives, &c. Open classes. Schedules from C. N. White, St. Neots.

July 13 and 14 at Louth.—Honey, Hives, and Bee Appliances in connection with the Lincolnshire Agricultural Society. Bee Department under the management of the Lincolnshire B.K.A. Schedules from R. Godson, Hon. Sec. Lincolnshire B.K.A., Tothill, Alford. **Entries closed.**

About the Middle of July, in the Home Park, Windsor (the date to be fixed by her Majesty the Queen).—Show of Honey and Bee Appliances, Berks B.K.A. (Windsor District), in conjunction with the Prince Consort's Association. Open Classes for Hives and Appliances, also Open Classes for Three Sections and Three 1-lb. Jars (free entry). Exhibits to be sold for the benefit of H.R.H. Princess Christian's Nursing Fund. Schedules from Mr. W. S. Darby, Hon. Sec., Consort Villas, Clewer, Berks. **Entries close July 3.**

July 19, 20, and 21 at Hull.—Bee and Honey Show in connection with the Yorks Agricultural Society. Schedules from Marshall Stephenson, Secretary, York. **Entries closed.**

July 19 at Pembury, Tunbridge Wells.—Honey Show in connection with the Gardeners' Flower Show. **Open class** for this season's honey. Schedules from W. Kemp, 2, Hill View, Pembury, Tunbridge Wells. **Entries close July 8.**

July 21 and 22, at Knowle.—The annual exhibition of the Bristol, Somersetshire, and South Gloucestershire B.K.A. will be held in connection with the local Horticultural Society's show. Schedules from Miss H. Dawe, Long Ashton, near Bristol. **Entries close July 15.**

July 26 and 27 at Wolverhampton.—Annual Bee and Honey Show of the Staffs. B.K.A. in connection with the Staffordshire Agricultural Society's Show. Open classes for Sections, Extracted Honey, and Bee Appliances. Schedules from Ellis E. Crisp, Sec., S.B.K.A., 8, Jesson-street, Coventry. **Entries close July 1.**

July 27 at Cambridge.—Honey Show in connection with the Cambs. and Isle of Ely Agricultural Society. Open class for single 1-lb. jar of honey. Schedules from C. N. White, St. Neots.

August 3 at Loughton, Essex.—Honey Show in connection with the Loughton Horticultural Society Annual Exhibition. Four classes for honey open to County of Essex. Entry fee, 6d. Schedules from C. E. Skinner, Hon. Secretary, Loughton. **Entries close July 29.**

August 5 at Helsby, Cheshire (In connection with the annual flower show.) Open classes for extracted honey and bees-wax. Schedules from Dr. Briant, secretary, Helsby, Warrington. **Entries close July 31.**

August 7 at Beddington Park, near Croydon.—Surrey B.K.A. Annual Show, in connection with the Beddington, Carshalton, and Wallington Horticultural Society. Increased prizes. Five Open Classes, including single 1-lb. jar and section, with free entry. Schedules from F. B. White, Hon. Sec., Marden House, Redhill. **Entries close July 30.**

August 7 and 8, at Delapre Park, Northants.—Northants B.K.A. Honey Show in connection with the Horticultural Exhibition. Three open classes with special prizes, including one for single 1-lb. jar of honey (entry free), six prizes, first prize, 20s. Schedules from Robt. Hefford, Hon. Sec., Kingsthorpe, Northants. **Entries close August 1.**

August 9, at Marlow, Bucks.—Annual Show in connection with the Marlow Horticultural Society, under the auspices of the Berks B.K.A Bees, Hives, and Appliances, Honey, &c. Eleven Open Classes. Liberal Prizes.—For schedules, apply to A. D. Cripps, Hon. Sec., High-street, Marlow. **Entries close August 5.**

August 16 and 17 in St. John's Schoolroom, Blackpool.—Annual Show of the Blackpool and Fylde Horticultural Society. Exhibition of honey under the auspices of the Lancs B.K.A. Open classes for twelve 1-lb. sections and twelve 1-lb. jars extracted honey, with prizes of 20s., 10s., and 5s. for each. Schedules from R. Atken, Sec., 17, Devonshire-road, Blackpool. **Entries close August 7.**

August 29 at Northwich.—Cheshire B.K.A. Show, in connection with the Cheshire Agricultural Society. Open classes for honey, wax, and single hives Schedules (shortly) from Mr. T. A. Beckett, St. Werburgh's Chambers, Chester.

September 6 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 30.**

September 13 and 14 at Derby.—Eighteenth annual show of the D.B.K A., in connection with that of the Derbyshire Agricultural Society. Eight open classes, including two with free entry for 1-lb section and 1-lb. jar of honey. Schedules from F. Walker, hon. sec. D.B.K.A., 64, Gerard-street, Derby. **Entries close August 31.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

B. M. (Basses Pyrénées).—*Covering Hive Entrances with Excluder Zinc to Prevent Swarming.*—The mention of this in reply to J. S. (p. 216) as an "absurd" idea simply conveyed what we knew to be a fact after trial, not in our own apiary (we never tried what always seemed a foolish notion) but from repeated reports of failures which have reached us. As an example, excluders have become blocked by drones endeavouring to squeeze through in the headlong outrush of a swarm, and strong stocks half suffocated thereby in hot weather. Our correspondent may safely accept our assurance that this plan has been tried years ago and discarded because of resulting as stated on p. 216. The fact of a hive not swarming a week and taking no harm from having a bit of excluder nailed across the entrance" is capable of many explanations, but our reference was to strong stocks in hot weather.

C. J. G. (Swindon).—Brood seems "chilled." No trace of disease in comb.

C. G. (Swindon).—*Size of Perforations for Queen-Excluders.*—The illustration on p. 58 of "Guide Book" shows the exact size of perforations.

D. G. (Redhill).—*Large Moth at Hive Entrance.*—The specimen is an immature example of the Privet Hawk moth (*Sphinx ligustri*). This moth is related to the monster Death's Head moth which sometimes attacks hives; but its appearance on the alighting-board of your hive was probably quite accidental. (F. W. L. S.)

M. W. B. O. (Dover).—1. When liquifying a 28-lb. tin of granulated honey in hot water, the lid of tin should be removed. 2. It seems almost incredible that the two samples should be from same bulk, the colour and flavour being quite different. We can only explain it by supposing that the greater heat and longer time which the darker sample was exposed to a high temperature has effected the change. 3. Comb sent bears unmistakable signs of incipient foul brood.

W. C. (Bodmin).—*Suspected Comb.*—The cells referred to bear no trace of disease, and bees have apparently hatched out from all empty cells in comb quite right.

Deighton (Wetherby).—*Are Weak Stocks Worth Uniting?*—A few queenless bees at this season possess no value for uniting, even if healthy, but when "sticky brown matter" is mentioned as in some cells, it would be worse than folly to add the bees to another stock. They should be destroyed; and before using the hive for another swarm, send a sample of the "sticky matter" referred to for our inspection.

L. M. (South Brent).—Comb contains only newly gathered pollen.

F. E. S. (Birmingham).—*Immature Brood Cast Out.*—The "experienced bee-keeper" mentioned, who examined the hive, has a far better chance of explaining the cause of young brood being thrown out than ourselves, with little to guide us. We can only add to his view that sudden change of temperature may have caused shrinkage of cluster and consequent "chilled brood."

J. S. G. (Faithley).—*A False Alarm.*—We only find chilled brood in comb sent, but you have the comfort of erring on the safe side.

J. T. A. (Enniskillen).—*Bees Dying.*—1. No foul brood in comb. 2. We should trust to favourable weather remedying the mischief rather than "unite."

D. C. (Mansfield), W. B. (Berks), W. G. (Hertford).—All samples sent are affected with foul brood, the last named very badly.

*** Several interesting letters are in type, but unavoidably held over till next week, among them "Bee-Keeping in the Riviera," "Bees and Flowers," and some "Queries."

Editorial, Notices, &c.

ROYAL AGRICULTURAL SOCIETY.

MAIDSTONE MEETING, 1899.

Nothing could well have been more auspicious than the opening day of the sixtieth meeting of the premier Agricultural Society of England at Maidstone on Saturday last, the 17th inst. The extensive and beautiful grounds of Mote Park, wherein the show was held, are admirably adapted for the purpose, and so amid lovely scenery and in ideal summer weather, "Implement Day" (always a quiet one) was greatly enjoyed by the few whom duty or inclination took to the show-ground on the 17th.

Contrary to the usual custom, that day was selected by the authorities of the R.A.S. for judging the bee-exhibits, and as 9 a.m. was the appointed hour at which "judging" was to begin, those who travelled from town that morning had to breakfast about 6 a.m. in order to "be in time." However, we and others got down without being late, and the first sight of the bee-department was most encouraging, and a nearer view still further pleased us, for never do we remember a better display in all our past years' visits to the "Royal." Not only did the entries equal that of the Jubilee show in 1897, but a good deal larger number of the total (258) were actually staged at Maidstone. Indeed, with a day or two longer for removing surplus honey there would have been almost no withdrawals.

With eight large and good "collections of bee appliances" (each a small "show" in itself); seven "Outfits for beginners in bee-keeping"; four "Honey Trophies;" about a dozen "Observatory Hives stocked with Bees," and good exhibits of hives, honey, and general items of interest, well arranged and set up; it will be gathered that the show was, to say the least, a good one.

As the whole of Saturday was taken up with judging, we must reserve for a second visit any detailed observations on the individual exhibits till next week, and end this notice by appending the list of awards, which were as follows:—

AWARDS:—

Class 343. *Collection of Hives and Appliances* (8 entries).—1st, Jas. Lee & Son, Holborn-place, London, W.C.; 2nd, W. P. Meadows, Syston, Leicester; 3rd, R. H. Coltman, Burton-on-Trent; h.c., J. S. Greenhill, Wimbledon, and F. Sladen, Ripple Court Apiary, near Dover; com., G. H. Varty, Etwall, Derby.

Class 344. *Outfit for Beginner in Bee-Keeping* (7 entries).—1st, W. P. Meadows; 2nd, T. Lanaway & Sons, Redhill; 3rd, R. H. Coltman; h.c., G. H. Varty.

Class 345. *Observatory Hive with Queen and Bees* (6 entries).—1st, Jas. Lee & Sons; 2nd, Thos. Richards, Burton-on-Trent; 3rd, C. T. Overton, Crawley, Sussex.

Class 346. *Observatory Hive (single frame) with Queen and Bees* (6 entries).—1st, Thos. Richards; 2nd, J. Playford, Staplehurst, Kent; 3rd, Horticultural College, Swanley, Kent.

Class 347. *Complete Frame-Hive* (10 entries).—1st, Jas. Lee & Son; 2nd, F. Sladen; 3rd, C. T. Overton; com., R. H. Coltman and T. Lanaway & Sons.

Class 348. *Complete Inexpensive Frame-Hive for Cottagers' Use* (9 entries).—1st, R. H. Coltman; 2nd, W. P. Meadows; 3rd, J. S. Greenhill; h.c., T. Lanaway & Sons and W. P. Meadows; com. (two awards), G. H. Varty.

Class 349. *Honey Extractor* (5 entries).—1st, 2nd, and h.c., W. P. Meadows; com., T. Louth, Hexton, Herts.

Class 350. *Useful Appliances Connected with Bee-Keeping, introduced since* 1897 (14 entries).—No awards.

Class 351. *Twelve 1-lb. Sections* (36 entries).—1st, Miss M. L. Gayton, Much Hadham, Herts; 2nd, E. E. Smith, Southfleet, Kent; 3rd, Geo. Fairs, Mundham, Chichester; 4th, Richard Brown, Somersham, Hunts.

Class 352. *Twelve 1-lb. Sections of '98 or any previous year*) (9 entries).—1st, Mrs. Longhurst, Longfield, Kent; 2nd, W. P. Meadows; 3rd, J. Sopp, Wallingford, Berks; 4th, Gen. Stanley Edwards, Farningham, Kent; com., Phil Jones, Church Stretton.

Class 353. *Twelve 1-lb. Sections Heather Honey (any year)* (8 entries).—1st, R. W. Patten, Alnwick, Northumbd.; 2nd, Thos. Walker, Esthwaite, North Lancs.; 3rd, Thos. Walker; 4th and reserve No., Robt. Huggup, Glanton, Northumbd.

Class 354. *Three Shallow Frames of '99 Comb Honey for extracting* (22 entries).—1st, Geo. Wells, Aylesford, Kent; 2nd, Richard Brown; 3rd, Geo. Wells; 4th and reserve No., Geo. Wells.

Class 355. *Twelve 1-lb. Jars Extracted Honey (light)* (33 entries).—1st, F. Chapman, Wells, Somerset; 2nd, E. C. R. White, Romsey; 3rd, Mrs. Longhurst; 4th, Richard Brown; com., Miss S. J. Cooper, Leicester.

Class 356. *Twelve 1-lb. Jars Extracted Honey (dark)* (13 entries).—1st, Jno. Berry, Llanrwst, N. Wales; 2nd, Mrs. H. H. Woosnam, Bickington, Newton Abbot; 3rd, E. E. Smith; 4th, Miss M. L. Gayton.

Class 357. *Twelve 1-lb. Jars Extracted Honey ('98 or previous year)* (13 entries).—1st, Lieut. Hawker, Longparish, Hants; 2nd, H. W. Seymour, Henley-on-Thames; 3rd, J. Sopp; 4th, Mrs. Longhurst.

Class 358. *Twelve 1-lb. Jars Extracted Heather Honey of* 1898 (9 entries).—1st, Jno. Berry; 2nd, Wm. Drinkall, Clitheroe; 3rd, Wm. Sproston, Slingborough, Staffs; 4th, Thos. Richards.

Class 359. *Twelve 1-lb. Jars Granulated Honey (any year)* (18 entries).—1st, F. Harper,

Uttoxeter; 2nd, H. W. Seymour; 3rd, Mrs. Longhurst; 4th, Rd. Brown.

Class 360. *Display of Honey in any Form* (6 entries).—1st, W. H. Seymour; 2nd, Mrs. Longhurst; 3rd, W. P. Meadows; 4th, Jas. Lee & Son.

Class 361. *Beeswax, not under 3 lb.* (13 entries).—1st, Jno. Berry; 2nd, Jno. Berry; 3rd, Mrs. Longhurst; 4th, C. S. Wadey, Broadstone, Dorset.

Class 362. *Beeswax (not under 3 lb.) in Cakes Suitable for Retail Trade* (7 entries).—1st, H. W. Seymour; 2nd, Mrs. Longhurst; 3rd, Jno. Berry; 4th, J. Edwards, Callington.

Class 363. *Honey Vinegar (½-gal. in Glass Bottles).*—1st, Mrs. Longhurst; com., H. W. Seymour.

Class 364. *Mead (½-gal in Glass Bottles).*—1st, H. W. Seymour; v.h.c., Mrs. Longhurst.

Class 365. *Instructive Exhibit of a Practical Nature.*—1st, H. W. Seymour.

Class 366. *Instructive Exhibit of a Scientific Nature.*—1st, F. W. L. Sladen.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

NOTES BY THE WAY.

[3715.] The month of June has, in a measure, wiped out the effects of the coldest May I can remember. With more genial weather in May, June, 1899, would, I think, have been a record month; but the cold, unsettled weather prevalent a few weeks ago retarded breeding, and the honey flow came so early that many stocks were not ready for supers and thus take advantage of the early flow. The up-to-date apiarist with everything on hand, from strong stocks to the latest style in sections or shallow-frames, and all in apple-pie order, will now be able to laugh at the laggards who failed to get things ready and thus lost the best part of the honey harvest.

Swarming has not been so rampant this season as it generally is amongst straw skeppists. I heard of a few extra early swarms among these, and then came a fortnight's break before any more came off. Meanwhile in both of our apiaries we have had about the usual amount of swarming; but as I grow in experience (if not in wisdom) I question if the sale of swarms pays as well as honey production. With a number of swarms on order the bee-keeper must leave a number of hives unsupered to enforce swarming, and thereby loses the early and often the best quality honey of the season. I have done so this year, and, comparing the work done in supers with the price of swarms, I conclude that honey-producing would have paid me best this season at any rate. Of course, it is not safe to have all the eggs in one basket or a failure with the one string means no music at all.

The mowing-machines and scythes have been busy during the past week, and the forage ground is, in consequence, considerably less than it was ten days ago. We have had no rain for nearly a month, so that things are getting dried up. Last evening, however, we had a good shower, the first since the Wednesday after Whitsun-day, and with a sinking barometer we are hoping for a good supply of rain, which will help on the aftermath of white clover, of which we have a good crop in some fields. It may also wash off the blight, and so prevent a recurrence of honeydew again this year.

I may say the honey gathered hitherto in this immediate district is of the finest quality in colour, consistency, and flavour. Yet I already hear of bee-keepers sacrificing their honey crop at a low figure. The middleman in their case thus gets a good profit on the deal. Possibly the producer does it more for pleasure than profit; but to those amongst us who take up with the pursuit as a means of livelihood, the fact that another under-sells you by 2s. 6d. per dozen in sections is not a very cheering start for the disposal of the honey harvest of 1899.

The show at Windsor was a great success, Mr. Coltman's new solar wax-extractor ought to have been outside the tent in working order. The weather was grand for a trial.—W. Woodley, *Beedon, Newbury.*

BEE-KEEPING IN THE RIVIERA.

[3716] The short note by Dr. Chapman on "Bee-keeping in the Riviera" (page 222) calls for a few words from myself as a "Rivierist" bee-keeper to fill out some notions probably ignored by the writer through his not being a bee-keeper, and, therefore, excusable.

Swarms may come out in April, but as a rule not before the latter part of the month, earlier ones being rare. Swarms in March are regarded as phenomenal. As a matter of fact, most swarms come out between April 20 and May 20. The mild winters here do not imply honey-yielding flowers; in fact, not only the towns—Nice, Mentone, Cannes, Antibes, Monaco, and Monte Carlo (the two latter only few)—raise flowers for the market, but even many of the smaller localities all along the seashore up to Toulon and Marseilles, have engaged in the flower production business, growing roses, stocks, gilliflowers, violets, chrysanthemums, carnations, &c. We may say that the flowers grown in the Riviera for marketing purposes yield no honey at all, and almost no pollen; so that swarming is not

induced early in the season. The principal honey-secreting flower blooming here in January and February is the wild rosemary; but this yields only enough to induce bees to leave the hive, and by reason of the cold chill they receive when crossing the shade of a mountainous rock the foraging journey proves fatal to many. Having no really cold winter to fear, it may be supposed wintering bees is easy; but our mild winters are a drawback to safe wintering and a big nuisance to bee-keepers, seeing that bees consume their stores, and death lurks about as soon as the sun tempts them to come forth. When March comes we have still some rosemary in flower, and thyme is in full bloom. The latter covers acres and acres of waste land going towards the mountains, but these plants yield honey but sparsely, and, as a matter of fact, the more hives the less each individual stock has for its share. In well-sheltered spots a hive or two may do well, but apiaries of ten hives or upwards cannot gather much surplus from this scanty flow. In April thyme still continues flowering, and fruit trees are in full bloom. Borage also yields well, but by mid-April all fruit bloom is over, and bees work principally on thyme and borage. At end of April honey locust and orange trees begin to flower, but where these two fail—as they sometimes do—swarms also are rare. Unhappily for bee-keepers, the orange trees are planted for perfume manufacturers, which abound here, and the flowers are gathered daily, even before the bees are able to visit them.

May is the great honey month, and consequently a swarming month for the Riviera proper. A few miles inland, however, the rough Alps retard the season, and June may be safely taken as the better spring month. The same flowers as in May for the seaside region abound inland in June except orange blossom. The orange trees are only grown in the warm and sheltered lowlands. Golfe-Jouan and Grasse yielding nearly a million of kilos of these flowers, which are transformed into perfume.

Lavender starts blooming about mid-June, but as the elevation above the sea-level is considerable, and retards flowering, the main crop only begins in July, and about the end of that month the lavender bloom is almost at an end. But—still unlucky for us bee-keepers—the perfume manufacturers buy the bushes of bloom which grow wild in the upper regions of the Alps, by hundreds of thousands of kilos. All places accessible to man are thus divested of the fragant and honey-yielding flowers, and the bees have the only chances of the steep and inaccessible wilds to roam in quest of honey. The honey from this source is yellowish-white, and of delicious flavour, very strongly scented.

In August sawwort abounds, happily in the same fields as the lavender, and although very fragrant is not used in the perfumery trade. This yields a second and abundant harvest of greenish-white honey, which, of course, can only be well distinguished by modern bee-keepers using the extractor, and these are very few. By the end of August we pastoral and frame-hive bee-keepers close the season and generally take our bees back towards the sea; where in October only some golden-rod bushes amuse the bees, and in November a good honey flow occurs from the blossom of the loquat tree (Eriobotrya Japonica) of Japanese importation, and by which, if the season be favourable, the bees may gather their full winter stores, especially if not too many hives be crowded in one place. But alas! the four chief or main yields rarely give freely in the same year, for we are subject to every change of wind and weather. Whilst in July last the lavender gave 20 lb. and upwards per hive, a storm destroyed everything on July 28, and the effects were so destructive to bee forage that the sawwort beyond reach of the storm bloomed beautifully, but the nectar failed entirely. In November the loquat (néflier du Japon) again secreted freely and abundantly.

(Conclusion next week.)

SOLAR WAX-EXTRACTORS.

[3717.] Most of the solar wax-extractors which I have seen or the drawings of which have been published, suffer from one defect which, in our climate, is a serious one—they do not concentrate the sun's rays upon the comb to be extracted. Nearly all have large plain surfaces of zinc or other metal which distribute the heat throughout the interior of the extractor and do not allow it to concentrate itself upon the spot where the work has to be done. In some forms there is no provision for preventing the loss of heat by radiation, which is very considerable unless the external woodwork is at least an inch thick.

Now, a good solar-extractor is quite a blessing to the bee-keeper; it is automatic, gives a wax of good colour and aroma without any expenditure of fuel, and does not necessitate the intrusion of the bee-master into domestic regions where a mere man sometimes feels, and probably is, in the way. The one defect of all solar extractors is that the yield of wax is slightly less than when the combs are extracted in the wet way; but most of us will probably gladly sacrifice a small percentage of wax for the sake of the other advantages. For some time I have had in use an extremely simple and efficient solar-extractor which, if you can spare the space in your columns at this busy season, I should like to make known for the benefit of our brethren of the craft. It can be constructed, or rather put together, by any one, and the component parts are not only inexpensive, but are to be found in most households. The first requisite is a wash-hand basin, preferably white, and as round as possible inside—not flat-bottomed. Into this is placed an enamelled colander

about 6 in. in diameter, with a small piece of muslin to cover the holes and strain the melted wax. Upon the basin is placed a sheet of glass, and the extractor is ready for use. For the colander a small pudding-basin may be substituted, with a piece of muslin tied over the top. The pieces of comb are placed on the muslin, and the wax will be found in a cake at the bottom of the basin. In order to secure the highest efficiency, the outer basin may be placed in a box full of dry sawdust, or, better still, cork-dust. Cork-dust prevents the radiation of heat so effectually that at 8 p.m. I have found the wax of the consistency of butter, and could easily remove it with a spoon. Instead of one piece of glass a double thickness may be used, or a piece of old plate-glass. The temperature in this or any other form of solar extractor can be considerably raised by placing a sheet of glass almost vertically upon the glass cover in such a position that the rays of the sun are reflected down into the apparatus. Careful thermometric measurements have shown that the temperature may be augmented more than 50 deg. Fahr. by this means.

Before placing the comb into the extractor it is worth while to cut it up and wash it in cold water. This gets rid of much of the pollen, which otherwise absorbs a considerable proportion of wax. Those who wish to obtain a maximum yield, especially in the case of old combs, should soak the crushed combs for twenty-four hours in cold water; then boil for a few minutes, and extract the crude cake of wax in the solar extractor.

The simple apparatus I have described will suffice to deal with the wax from an apiary of about twenty hives, and I trust other bee-keepers will find it as useful as I have myself.—WALTER REID, *Addlestone, Surrey, June* 16.

[3718.] Some one has asked for result of experiments with the "Solar," and as my work with that particular appliance has rather elated me, I am led to tell how it is done.

I may first state that last season I had a "washing boiler" experience in wax extracting which resulted in disgust, so that I feel something like Othello when he said "Our wars are done, the Turks are drowned!" for with the solar extractor it is (as we say here on the skirts of Wychwood Forest) "easy as singing a' bed" to render wax.

The body of my extractor consists of a "Sunlight Soap" box with a board nailed inside on the slant to carry a piece of bright sheet tin. On the latter I lay combs and odd wax and in bottom of box I set an enamelled pie-dish and put on the lid.

This lid has a piece of glass about 1 ft. 6 in. by 1 ft. 2 in. at present simply laid in the rabbet (it is to be puttied in later on) and a second sheet of glass fixed over it. The heat collects in the soap-box at a tremendous rate in consequence, and the wax melts, runs down from the dross into the dish to be re-melted in kitchen oven, and then run into egg-cups. Result:—The bee-man is pleased and his pocket will be warmed with pennies to spend, and one feels like saying "Wish I had tried this dodge before."

Just fix one up by laying sheet of glass over a box and without any elaborate joinery or bother you will be pleased with the result, and instead of wax-melting giving you the horrors you can joke about it by asking the young folk indoors the riddle our vicar in my boyhood used to, when discoursing, put to us with his magic-lantern screen:—"What is the difference between a bee and a donkey?" Answer:—"The bee gets honey and the donkey gets whacks."—JOHN KIBBLE, *Charlbury, June* 13.

[3719.] In common with many of your readers, I have always had a lot of bother in melting old combs, and often found that the wax obtained did not at all compensate for the trouble and mess occasioned. Having some old combs on hand, this week I improvised a solar wax-extractor by means of a 9-in. surplus-box, a piece of sheet-iron, and a plate of glass to cover with. In a short time I had a beautiful cake of wax with very little trouble and no mess. Had I tried this plan five years ago I should by this time have saved many pounds of good wax which through the old method (of melting in a copper) I have lost. I am now making a proper solar extractor for constant use, and would advise every bee-keeper to try this plan.—LANCELOT QUAYLE, *Glenmay, Isle of Man, June* 16.

(*Correspondence continued on page* 244)

HOMES OF THE HONEY-BEE:

THE APIARIES OF OUR READERS.

Our Scotch friends, Messrs. Robson Bros., whose apiary is shown on opposite page, furnish another instance of the "keeping abreast of the times" which, to a bee-beeper, means the substitution of the frame-hive for the time-honoured straw skep. It also affords the strongest evidence of the manifest advantages gained by the change when those who "relinquish not without regret," as Mr. Robson writes, skeps for frame-hives find the only use to which the former can be beneficially applied is for swarms. Mr. Robson, in response to our request, writes so interesting an account of the apiary and its working that we need add nothing to it. He says:—

"The town of Lauder in Berwickshire is situated twenty-five miles south from Edinburgh, and before the days of railways was reckoned a place of some importance; being on the direct route between Edinburgh and London. These days are, however, gone; our burgh, once so full of life and activity, is now comparatively lifeless and decaying; the railroad some five miles distant having diverted

the traffic and so gradually drained the life from the place. A line of light railway, however, from Fountainhall Station, N.B.R., has been surveyed, sanctioned, and the first sod cut. This, we hope, may be the means of reviving trade and restoring it to something like its former prestige.

"The situation stands high, and although we have abundance of white clover, wild mustard, &c., and are within easy reach of the heather, it may be called only a second-rate bee-district. I commenced bee-keeping in 1873, so have had over twenty-five years' experience of apiary work. My first skep of bees was one of three left to my mother by a man I now remember with heartfelt gratitude, who on his death-bed bequeathed his three skeps (nearly all his worldly possessions) to those who had shown him some little kindness. Soon after we had the skep brought home and placed in the position it was to occupy in our garden, where, early during the year following, it increased to three colonies by swarming; and then having three skeps to commence with, I resolved to go into bee-keeping on a somewhat enlarged scale.

"About this time my brother, who now shares the work of the apiary with me, gave me some occasional help, so we resolved to make the apiary a sort of joint-stock concern. As our stock increased we began to make our own skeps, after a lesson or two from an old hand. Small sizes at first, but having seen and read Pettigrew's 'Handy Book of Bees' we greatly enlarged them, with the result of enlarged profits. This continued until 1886, when a friend (Mr. J. Turnbull), who originated in 1892 the Lauderdale Bee-Keepers' Association and has ever since been its president, introduced the bar frame hive, which is now in general use in the district.

"To keep abreast of the times we had to relinquish—not without regret—our favourite cane wrought skeps, thirty in number and take to the frame hive. Our apiary now contains twenty of the latter and four skeps for swarms; the frame-hives being worked one half for sections, the other half with shallow-frames for extracting. Last year foul brood made its appearance for the first time among us, and after stamping out five infected hives we seem to have got rid of the pest.

MESSRS. ROBSON BROS.' APIARY, LAUDER, BERWICKSHIRE.

"We sell our honey at from 8d. to 10d per lb. for sections or glass jars wholesale, but find it more difficult to dispose of the produce here than in former years, bee-keepers being more numerous than in former times. We are, however, still able to clear out every year.

"In the photo my brother occupies the position on the left side, I stand to the right, minus coat, the young lady in front is 'help' to my sister, who keeps house for us. All the hives were made by ourselves as amateurs, the fancy hive in the foreground being designed and made by myself.

"In conclusion I may say that I have been hon. secretary and treasurer to the Lauderdale Bee-keepers' Association for the last five years, and have been a subscriber to your paper from 1886 to the present time."

CORRESPONDENCE.

(*Continued from page* 242.)

THE "DICKEL" THEORY.

ASSISTING SCIENTIFIC RESEARCH.

[3720.] Will you allow me, through the columns of the B.B.J., to make a request to those British bee-keepers who may be able to help me in accumulating material for scientific research in connection with the "Dickel" theory?

I should be exceedingly obliged if any who have queens, either old, drone breeders, or otherwise, which they do not any longer require, would forward them to me alive, and with at least half a dozen worker attendants.

I should also be grateful for drones taken from stocks headed by unfertile queens.

It is absolutely essential that an exact and accurate account should be sent with each queen or drones.

As the queens and drones are only required for anatomical examination, it is of no consequence should they be externally injured in any way.

Those who are good enough to assist in this way will greatly oblige by forwarding the specimens addressed to me at 1, Francis-grove, Wimbledon, S.W., until the 27th of the present month, after that date to me at the Zoological Institute, Tübingen University, Würtemberg, Germany. — R. HAMLYN-HARRIS, F.Z.S., F.E.S, &c., *June* 12.

FOUL BROOD.

A CURIOUS CASE.

[3721.] What should be done in the following case? A hive of mine unexpectedly swarmed, and after being hived three or four hours the swarm decamped and united itself to a weak stock in a cottager's skep that had been much robbed (or, at least, where there had been much fighting). Since the swarm departed I have found foul brood in the hive —one comb only — and under treatment it appears to have been stopped. All my other stocks are healthy. Probably this stock may have imported the disease from visiting the skep, but no doubt they have taken the disease with them. Query: What advice should be given about the skep? It is awkward for me to advise its destruction. I suspect foul brood is raging in the skeps. I detected it in a small apiary of three frame-hives; and, after uniting and treating two of them, the stock made from the two lots has now healthy brood coming on.—ALPHA, *Hull, June* 19.

[There is less chance of your swarm carrying disease into the cottager's weak stock in skep than of the bees finding it already in their new home. We do not see that you can do more than inspect the skep later on, and ascertain its condition after breeding has gone on for a time.—EDS.]

Queries and Replies.

[2224.] *Uniting First and Second Swarms.* —1. One of my hives swarmed to-day (June 15), and I have hived the bees on six frames in a temporary hive. Now supposing a second swarm should issue in eight or ten days, would it be safe and advisable to unite the two lots, putting the drawn-out combs into a new hive and shaking off the bees amongst those of the new swarm. 2. The queen of the prime swarm was hatched in 1897. Would she, or the virgin queen at the head of the second swarm, be most likely to conquer in the inevitable battle for supremacy? 3. I am not anxious for increase of stocks, having eight now on my front lawn, and I should like, therefore, to do something to avoid having more. — W. H., *Brilley, Herefordshire, June* 15.

REPLY.—1. The difficulties of uniting, after the lapse of ten days, are the same as with two swarms from different hives. Your proposed plan would probably, therefore, result in most of the bees of second swarm being killed, unless proper precautions are taken. 2. We should expect the virgin queen to be the victim, but it is not certain. 3. Our advice is to return the second swarm to the parent colony on the morning of the day following its issue. If this is done there is not much fear of the swarm coming off again, and no increase of stocks will follow.

[2225.] *Bees Refusing to Enter Sections.*— 1. I put a rack of sections on a frame-hive (very strong in bees) on May 29, hoping that it would in a measure prevent swarming—the body of the hive being quite full—but exactly a week afterwards a swarm issued. Not a single bee had entered the sections up to the time of swarming, and even now (June 11) they still refuse to take to them. The sections have full sheets of foundation, and they lie at right angles to the apertures in the excluder zinc. 2. What can I do to induce them to start working them?—A. T. I., *June* 13.

REPLY.—1. The inference is that the bees had become possessed of the "swarming impulse" prior to having surplus room given. The point is to give room a little in advance, and it is not at all uncommon for bees to swarm rather than take possession of surplus chambers. 2. Seeing that the hive has been depleted of more than half its bees (in the swarm), it will be some time yet before the sections are likely to be taken to, if at all this season. The rule is not to always expect both swarms and surplus from one hive the same season.

[2226.] *Honey Producing and Marketing.*— Can you give me some information as to how I can find a market for extracted honey? I think of going more largely into bee-keeping,

and would like to know of some wholesale house who would buy my honey as produced. My uncle and myself have kept bees for twenty years past, and have always experienced some difficulty in disposing of our produce. Any information, therefore, that you can give will oblige.—R. A., *Broadway, Worcester.*

REPLY.—We should be very glad if able to find purchasers for all the honey produced by our readers. It so happens, however, that most of those who now trade regularly in British honey must, as a matter of course, have already made arrangements with those from whom they get their supplies; and, when well served, it is not easy to induce them to change, unless they found it advantageous to do so. Besides, a producer has first of all to prove that his honey is of the right quality, and, secondly, that he understands how to prepare it for the market. For the rest, it may be said that in our "Homes of the Honey Bee" will be found the best of all information as to finding a market for honey; and as one account (among many) which deals directly with this important phase of bee-keeping, we would refer all who desire information on the point, to B.B.J. of March 18 (vol. 25), page 105, whereon Mr. John Berry details his own experiences in honey producing and selling, and how he makes a success of it.

PROGRESS IN BEE-KEEPING.

OUTDOOR BEE LECTURES AND DEMONSTRATIONS.

We have been favoured with several reports of outdoor lectures and demonstrations of practical bee-keeping recently given under County Council auspices by representatives of Bee-Keepers' Associations in the respective districts where the several demonstrations took place. Our limited space makes it impossible for us to give full particulars, but we may mention that a large party, consisting of nearly 100 ladies and gentlemen, were on Saturday, the 27th ult., entertained by Sir Charles Seely at his residence, Brook House, Isle of Wight. The primary object of the excursion was to stimulate interest in bee-keeping, and to this end the Rev. R. L. Morris, Rector of Brook, an enthusiastic kee-keeper, invited the visitors to the rectory, and there, ably assisted by Mrs. Morris, gave interesting and practical demonstrations in his own apiary of how bees may be handled by the skilful apiarian.

With this brief allusion we must be content, except saying that a very enjoyable day was spent, and hearty thanks awarded to their host, Sir Charles Seely, and the members of his family who did so much to contribute to the general comfort and pleasure of the visitors by conducting them over his palatial residence and grounds. Mr. and Mrs. Morris were also warmly thanked in a few words by Dr. Groves, J.P., and the party returned to Newport, about ten p.m.

A similar and no less pleasant function, though on a somewhat smaller scale, was held under the auspices of the Lancashire B.K.A. at the apiary of Mr. Round, Birkdale, near Southport, in the presence of a large and influential attendance of the leading residents of the neighbourhood. On this occasion Mr. F. H. Taylor, of Manchester, hon. secretary of the Association, undertook the task of lecturer and demonstrator. Mr. Taylor, who holds a first-class expert's certificate, was very successful in all his operations, showing every phase of bee-keeping and handling live bees without danger to onlookers.

A third meeting of like import and with the same object was held under the auspices of the Cheshire County Council at the apiary of Mr. Bradburn, Marsland-road, Sale, on the 3rd inst. Mr. Bradburn is a certificated expert of the B.B.K.A. and local hon. secretary of the Cheshire B.K.A., and has formed a large centre of bee-keepers in his own neighbourhood. There was a large gathering of ladies and gentlemen present, and all were delighted with the lecture and demonstration. Mr. Taylor again officiated and everything went off extremely well and without a hitch of any kind.

Echoes from the Hives.

Glenmay, Isle of Man, June 16.—Since the sudden change in the weather my bees have been very busy among the sycamore and hawthorn bloom, and have been able to gather some surplus from these sources. Some of my hives have a second surplus-chamber on already. There is, however, very little honey abroad at present; white clover just beginning to bloom here and there, but the very dry weather retards the growth and development of this important bee-plant.—LANCELOT QUAYLE.

West Lavington, Devizes, June 19.—I put surplus-chambers on ten colonies on June 3, and nine days later the first box of shallow-frames were nearly full; gave second supply of boxes on 12th. To-day (19th) this second lot are well on for being full. I intend to give a third lot of boxes to-morrow. Our bees bid well for yielding half a ton of surplus honey this year if anything like good weather continues.—WM. BARTLETT.

Bee Shows to Come.

June 30 at St. Ives.—Hunts B.K.A. annual show of honey, hives, &c. Open classes. Schedules from C. N. White, St. Neots.

July 13 and 14 at Louth.—Honey, Hives, and Bee Appliances in connection with the Lincolnshire Agricultural Society. Bee Department under the management of the Lincolnshire B.K.A.

About the Middle of July, in the Home Park, Windsor (the date to be fixed by her Majesty the Queen).—Show of Honey and Bee Appliances, Berks B.K.A. (Windsor District), in conjunction with the Prince Consort's Association. Open Classes for Hives and Appliances, also Open Classes for Three Sections and Three 1-lb. Jars (free entry). Exhibits to be sold for the benefit of H.R.H. Princess Christian's Nursing Fund. Schedules from Mr. W. S. Darby, Hon. Sec., Consort Villas, Clewer, Berks. **Entries close July 3.**

July 19, 20, and 21 at Hull.—Bee and Honey Show in connection with the Yorks Agricultural Society.

July 19 at Pembury, Tunbridge Wells.—Honey Show in connection with the Gardeners' Flower Show. **Open class** for this season's honey. Schedules from W. Kemp, 2, Hill View, Pembury, Tunbridge Wells. **Entries close July 8.**

July 21 and 22, at Knowle.—The annual exhibition of the Bristol, Somersetshire, and South Gloucestershire B.K.A. will be held in connection with the local Horticultural Society's show. Schedules from Miss H. Dawe, Long Ashton, near Bristol. **Entries close July 15.**

July 26 and 27 at Wolverhampton.—Annual Bee and Honey Show of the Staffs. B.K.A. in connection with the Staffordshire Agricultural Society's Show. Open classes for Sections, Extracted Honey, and Bee Appliances. Schedules from Ellis E. Crisp, Sec., S.B.K.A., 8, Jesson-street, Coventry. **Entries close July 1.**

July 27 at Cambridge.—Honey Show in connection with the Cambs. and Isle of Ely Agricultural Society. Open class for single 1-lb. jar of honey. Schedules from C. N. White, St. Neots.

August 2 at Henbury, near Bristol.—The Henbury District B.K.A. show of honey, &c., in connection with the Horticultural Society's show. Open classes for six 1-lb. sections and six 1-lb. jars, extracted honey. Schedules from C. A. Newman, hon. sec., Henbury, near Bristol. **Entries close July 25.**

August 2. In Neston Park, Neston, Wilts.—Honey Show in connection with the Atworth and District Horticultural Show. Seventeen Classes for Honey and Bees, including Single 1 lb. Jar and Single 1 lb. Section, with no Entry Fee. Schedules from J. P. Inkpen, Neston, Corsham. **Entries close July 26.**

August 3 at Loughton, Essex.—Honey Show in connection with the Loughton Horticultural Society Annual Exhibition. Four classes for honey open to County of Essex. Entry fee, 6d. Schedules from C. E. Skinner, Hon. Secretary, Loughton. **Entries close July 29.**

August 3, 4, 5, and 7, at Liverpool.—Bee and Honey Show in connection with the Royal Lancashire Agricultural Society. Special Classes and Liberal Prizes for Honey, &c. Lectures in Bee Tent. Schedules from 34, Castle-street, Liverpool. Jas. Birch, Secretary. **Entries close July 1.**

August 5 at Helsby, Cheshire (in connection with the annual flower show.) Open classes for extracted honey and bees-wax. Schedules from Dr. Briant, secretary, Helsby, Warrington. **Entries close July 31.**

August 7 at Beddington Park, near Croydon.—Surrey B.K.A. Annual Show, in connection with the Beddington, Carshalton, and Wallington Horticultural Society. Increased prizes. Five Open Classes, including single 1-lb. jar and section, with free entry. Schedules from F. B. White, Hon. Sec., Marden House, Redhill. **Entries close July 30.**

August 7 and 8, at Delapre Park, Northants.—Northants B.K.A. Honey Show in connection with the Horticultural Exhibition. Three open classes with special prizes, including one for single 1-lb. jar of honey (entry free), six prizes, first prize, 20s. Schedules from Robt. Hefford, Hon. Sec., Kingsthorpe, Northants. **Entries close August 1.**

August 9, at Marlow, Bucks.—Annual Show in connection with the Marlow Horticultural Society, under the auspices of the Berks B.K.A. Bees, Hives, and Appliances, Honey, &c. Eleven Open Classes. Liberal Prizes.—For schedules, apply to A. D. Cripps, Hon. Sec., High-street, Marlow. **Entries close August 5.**

August 16 and 17 in St. John's Schoolroom, Blackpool.—Annual Show of the Blackpool and Fylde Horticultural Society. Exhibition of honey under the auspices of the Lancs B.K.A. Open classes for twelve 1-lb. sections and twelve 1-lb. jars extracted honey, with prizes of 20s., 10s., and 5s. for each. Schedules from R. Atken, Sec., 17, Devonshire-road, Blackpool. **Entries close August 7.**

August 25 and 26, at Dunfermline, N.B.—Bee and Honey Show, West of Fife and District B.K.A., in connection with the Horticultural Society. Schedules from Geo. Weston, Sec., Grant's Bank, Dunfermline. **Entries close August 22.**

August 29 at Northwich.—Cheshire B.K.A. Show, in connection with the Cheshire Agricultural Society. Open classes for honey, wax, and single hives Schedules (shortly) from Mr. T. A. Beckett, St. Werburgh's Chambers, Chester.

September 6 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 30.**

September 13 and 14 at Derby.—Eighteenth annual show of the D.B.K.A., in connection with that of the Derbyshire Agricultural Society. Eight open classes, including two with free entry for 1-lb section and 1-lb. jar of honey. Schedules from F. Walker, hon. sec. D.B.K.A., 64, Gerard-street, Derby. **Entries close August 31.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

NOVICE (Durham).—*Buying Stocks on Other than Standard Frames.*—It is very unfortunate to find, after purchase, that the frames are not of the standard size. Moreover, the seller, if aware that he was dealing with a beginner in bee-keeping, should have stated that the frames were not standards, seeing that to the vast majority of bee-keepers it considerably lessens the value of a stock of bees if they are not on frames of orthodox size, and a corresponding reduction in price should be made to any one like yourself intending to work only frame-hives of modern type. For the rest, so far as getting the bees and combs into new hives is concerned, we cannot do better than refer you to page 138 of "Guide Book," where will be found full instructions for transferring combs into frames.

J. P. (Trefnant).—*Bees and Horses.*—If your neighbour takes legal proceedings and can prove that the bees are a nuisance and a hindrance to him in following his ordinary calling, you will no doubt be held responsible for damage to his horses. On the other hand, very much may be done by a careful bee-keeper in the way of diminishing this risk by judicious management of the bees.

C. MARKS (S. Devon).—*Bees Deserting Stores in Hive.*—1. The probability is that the bees were queenless and few in number for some time before deserting, and have joined some of the contiguous hives. 2. There was no trace of brood, foul or otherwise, in cells, so we cannot advise as to risk of hiving a swarm on the combs of food referred to. It is, however, always best to err on the safe side.

J. S. (Downham).—*Ridding Hives of Superfluous Drones.*—Some bee-keepers catch

drones in a cage formed of excluder zinc, and destroy in water. The best preventive, however, is to leave only a small amount of drone comb in each hive.

T. BADDELEY (Stoke-on-Trent).—*Transferring Bees from Skep to Frame-hive.*—The time within which bees will work down from skep to a frame-hive placed below cannot be more than guessed at, so much depends on the strength of the colony in skep, weather, &c. If the bees were doing well when received from Scotland six weeks ago, they should have been in full possession of the frames of foundation before now; but your report as to absence of brood in skep and no bees below points suspiciously to queenlessness. Being "quite a novice," you should get some practical bee-keeper to examine the hive and tell you its condition. This would set all doubts at rest at once.

INEXPERT (Coventry).—*Using Queen-excluders.* The fact of perforations in zinc running parallel to top-bars is not a very serious drawback; but we much prefer to have them cross the bee-spaces between combs, for obvious reasons.

W. BARRETT (Bodmin).—*Dead Queen Cast Out.*—Queen sent is evidently a virgin. We cannot undertake *post-mortem* exams. to see "if there are foul-brood germs in body." Inspection of the combs should decide the point as to disease with far less trouble; besides, your specimen was dried up and unfit for *post-mortem.*

A. VINES (Newport, Mon.).—*Extracting from Brood-combs.—Avoiding Foul Brood.*—1. Except to meet special needs, it is not advisable to extract honey from combs in brood-nest at all. 2. We cannot say that there is possible danger of transmitting disease by means of foundation made from wax got from infected stocks, but the risk is no doubt minimised by the various processes gone through in melting and cleaning the wax. 3. Chilled brood will not of itself generate foul brood.

D. JARROW (Chigwell).—*Plans of "W.B.C." Hive.*—We have no special published plans—with measurements—of the "W.B.C." hive apart from those which have appeared in these pages at various times, notably in issues for November 3 and 10 last year.

G. K. (Chipping Sodbury).—*Compensation for Loss of Swarm.*—The question seems to us entirely one of equity for the County Court Judge who hears the case. If the bees took wing after being hived in skep, and were lost by reason of the unwarranted and mischievous interference of the person mentioned, we should advise claiming moderate value (not so much as £1) for the swarm. Since the bees were hived and on your own premises, there can be no excuse for what was done by the person complained of.

J. D. (Surrey).—*Suspected Comb.*—1. There are indisputable evidences of foul brood in comb sent. 2. If bees are strong in numbers the best course will be to get them off the combs and deal with them as an artificial swarm, as recommended in "Guide Book" (page 148).

J. C. S. (Handsworth).—Comb contains nothing worse than hard, mouldy pollen.

J. H. W. (N.B.).—A decided case of foul brood evidently contracted some time ago.

A. B. X. (Newmarket).—Foul brood evidently just developing.

S. W. (Bury St. Edmunds).—Only chilled brood in comb. No disease.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

WANTED. — Good English SECTIONS and EXTRACTED HONEY in any quantity. Samples to LEENEY, 23, Goldstone-villas, Hove, Sussex. 262

FINE THREE-FRAME NUCLEI, 15s. each on rail. E. BROCK, Tavern-street, Stowmarket. 263

BEE PLANT. Borage, 50 1s. 3d. TAYLOR, Birch Fold, Fallowfield, Manchester. 267

CREST-BRED HEN CANARY, first and special, Exchange Swarm. Prize cards sent. Wanted offers. HOLMES, 20, Brunswick-road, Plymouth. 264

PURE ENGLISH HONEY, light colour, 6½d. per lb. Sample, 2d. Cash or deposit. A. COE, Ridgewell, Halstead, Essex. 265

ENGLISH LEVER (strong) WATCH, splendid timer. Cost £5. Will send on approval. What offers to 35s. value. J. REEVES, 27, Union-street, Coventry. 261

FOR SALE, four strong healthy STOCKS in frame hives. £3 for the lot, packed and free on rail. Cheaper than swarms. Owner giving up bee-keeping. PECK, Grocer, Carlton, Lowestoft. 258

A Lady giving up her Bees is wishing to SELL 3 bar-framed Hives and Stocks. Bees healthy and in good condition. Hives with supers complete, 21s. each. MISS STEPHENSON, Bandalls, Chislehurst. 260

WILL EXCHANGE Large Double-Burner Oil STOVE (perfect) for good Swarm of Pure Ligurian BEES, guaranteed healthy; also a Pair of Buff Pekin BANTAMS (pure) for another SWARM. BARDGETT, Kirkley Thore, Penrith. 259

BRICE'S RELIABLE QUEENS. Well-known strain, one quality, one price. Mated tested Queen, 5s. 6d. Post free in perfected travelling and introducing cage. Safe arrival guaranteed. HENRY W. BRICE, 100, Brigstock-road, Thornton Heath.

RABBITS, Lop-ear. English Grey Cross; grey, very hardy; make large rabbits; both sexes; 7 weeks' old; 1s. each. Also very fine Grey Doe of same, 4½ months, 2s. 6d. WM. LOVEDAY, Hatfield Heath, Harlow, Essex.

2/2.—BEE GLOVES, as recommended by the great bee authority the Rev. W. E. Burkitt, 2s. 2d. per pair, post paid. Special terms for wholesale buyers. Manufactured by EDWARD REYNOLDS, Glove and Gaiter Manufacturer, Andover. 257

TO BEE-KEEPERS near London. For immediate SALE owing to removal, Three W. B. C. HIVES, each having two shallow-frame boxes, drawn out combs, excluder and quilts, also two empty W. B. C. Hives, and two gross tall tie-over 1 lb. jars. Buyer to remove. For further particulars apply to T. BROS, Springfield, Upper Clapton. 266

LACE PAPER for GLAZING SECTIONS. 100 strips, 7d., 200, 1s. 2d., 300, 1s. 6d., 500, 2s. 3d., 1,000, 4s. Post free. Best quality. Neat Patterns. W. WOODLEY, Beedon, Newbury.

COMFORTABLE APARTMENTS for Brother Bee-keepers visiting Douglas. HORSLEY, Merridale House, Empire-terrace, Top of Castle Drive, Isle of Man. 183

Prepaid Advertisements (*Continued*).

1899 QUEENS, raised from Stocks possessing the most desirable qualities; mated and now laying; 5s. each, two for 9s. Virgin Queens, 3s. each, two for 5s. WM. LOVEDAY, Hatfield Heath, Harlow, Essex.

HONEY FOR SALE at once at 4d. and 6d. per lb. Samples 2d. JOHNSON & SON, Soham, Cambs. 246

3 BLOW'S "WELLS" HIVES complete, nearly new. Exchange honey. Dr. WALKER, Kirkby-Stephen. 243

SWARMS, NUCLEI, and PROLIFIC QUEENS. Prompt delivery. E. WOODHAM, Clavering, Newport, Essex. 254

QUEENS. Only perfect and choice selected queens sent. Fertile, 4s. 6d.; Virgins, 2s. Grasmere Apiary, Ilminster. 236

ENGLISH MADE HONEY JARS (1-lb. screw-cap). 14s. per gross; sample, 6d. JAS. DYSON, Stainforth, Doncaster. F.N.

QUEENS, STOCKS, NUCLEI, and SWARMS. A few more orders can be accepted. List free. Rev. C. BRERETON, Pulborough, Sussex.

GOOD Strong Healthy SWARMS from 7s. to 10s. Immediate disposal. Satisfaction, with safe arrival, guaranteed. Approval, deposit. SPEARMAN, Colesbourne, Andoversford. 253

NOW READY, a few SWARMS of BEES from 3½ to 7-lb. weight, on rail, at 2s. 6d. per lb. More to follow. Boxes to be returned. W. HAWKES, Barley, near Royston, Herts.

PRIME NATURAL JUNE SWARMS of English BEES from my selected strain, 12s. 6d. and 15s. each, packing box, and put on rail free. Through booking to all parts. Telegrams, "Woodley, Beedon, Chieveley." W. WOODLEY, Beedon, Newbury.

FOR SALE, 2 Stocks pure LIGURIAN BEES, 1898 queens, in Lee's hives, 30s. each. Swarms, when ready, 10s. 6d., 12s. 6d., 15s. Also small Apiary of 6 strong stocks and sundries. The lot £5. R. NESS, Expert, Olstead Grange, Ampleforth, York. 249

WE LEAD, OTHERS FOLLOW.—TRANSPARENT CELLULOID QUILTS, 17 in. by 15 in. or 17 in. by 17 in. Reduced price 1s. 4d. each (post free 1s. 7d.) CELLULOID QUEEN EXCLUDERS 17 by 15 or 17 by 17. Reduced price 1s. 6d. each (post free 1s. 9d.) R. H. COLTMAN, 49, Station-street, Burton-on-Trent.

£600.—FREEHOLD.—SEVEN ACRES of valuable MARSHY ACCOMMODATION LAND, adjoining Borough of Saltash, four miles from Plymouth. Cow-house, Piggeries. Finest spot in England for Bees. COTTAGES also FOR SALE. MORTIMER, Home Park, Saltash, Cornwall. 209

QUEENS, Fertile 5s., Virgin 2s. 6d.

From prolific and selected mothers. Safe arrival guaranteed, in self-introducing cages. Unsolicited testimonials ad lib. HOWES, Melton House, Knowle, Bristol. Telegrams: Howes, Totterdown, Bristol.

THE NEW "W.B.C." UNCAPPING KNIFE,

may be had retail from all dealers in bee-appliances price 3/-, or 5/6 per pair, and wholesale from

S. BLOMFIELD & CO.,
MANUFACTURING CUTLERS,
33, CHARLES STREET, HATTON GARDEN, LONDON.

STAFFS BEE-KEEPERS' ASSOCIATION.

The Annual Show and General Exhibition
OF
Honey, Bees, and Bee-Keeping Appliances,
will be held in conjunction with the STAFFORDSHIRE AGRICULTURAL SOCIETY'S MEETING, at
WOLVERHAMPTON,
ON
Wednesday and Thursday 26th & 27th July, 1899.
Gold, Silver, and Bronze Medals.
Liberal and Increased Money Prizes.
15 Classes, including open Classes for Sections, Extracted Honey, and Appliances.
Schedules and all information from ELLIS E. CRISP, Secretary, S.B.K.A., 8, Jesson-street, Coventry.

PURE ITALIAN BEES.

SILVIO GALLETTI, APICULTURIST,

TENERO (Italian Switzerland).

Date.	Fertile Queen. s. d.	1 lb. Swarm. s. d.	2 lb. Swarm. s. d.	3 lb. Swarm. s. d.
June	5 6	11 0	14 6	17 0
July	5 0	8 6	12 0	17 0
Aug.	4 6	7 6	10 6	14 6
Sept.	4 0	7 0	9 4	12 0
Oct.	3 6	6 0	8 6	10 0

If a Queen dies in transit, and is returned at once, it will be replaced free of charge. Queens sent safely by letter, *post free*. For Swarms, cost of carriage charged to the receiver. *Pureness of breed and safe transport guaranteed.* Liberal discount on large orders. All orders executed promptly and conscientiously.

Payment by Money Order.

SCREW-CAP HONEY BOTTLES

(ENGLISH MAKE).

16 oz. in bags of 10 doz., **12/9**; 7 oz. in bags of 6 doz., **7/-**. Packing free.

Sections, Weed Foundations, Hives, &c.

GARNETT BROS., 29, High St., ROTHERHAM.

PATRON:
Her Majesty the Queen.
PRESIDENT:
The Earl of Derby, K.G., G.C.B.

GREAT SHOW
AT
LIVERPOOL,

AUGUST 3rd, 4th, 5th, and 7th, 1899.

£3,438 in Prizes.

SPECIAL CLASSES FOR HONEY, &c., &c.

Entries Close July 1st.

Prize Lists from 34, Castle-street, Liverpool.
JAMES BIRCH, *Secretary.*

WANTED, 100 BEE-KEEPERS to buy the "**HAMPSHIRE SUCCESS**" **HIVE.** Made of best pine, and containing 10 standard frames, with metal ends; one dummy loose floor, with legs; porch and entrance slides; crate of sections, with foundation fixed; lift and roof. Complete, **10s. 6d.**

Illustrated Catalogue Free.

OWEN BROWNING,
Hive Manufacturer,
KINGSOMBORNE, STOCKBRIDGE, HANTS.

TO BEE-KEEPERS IN KENT.

BEES and BEE-APPLIANCES
of best quality
SUPPLIED PROMPTLY, CARRIAGE PAID to any Station in Kent, at low prices. Our Price List, free on Application, gives descriptions of **Sladen's Sections** and other Specialities.

F. SLADEN, Ripple Court Apiary, DOVER.

BEE -APPLIANCES -HIVES and -KEEPERS' WOOD.

Illustrated Catalogue Free.

E. J. BURTT, Manufacturer, **Gloucester.**

Editorial, Notices, &c.

"SHOWS TO COME."

If evidence were wanting of the continually-growing interest attaching to exhibitions of bees and bee-produce, it is surely seen in the long list of "Bee Shows to Come" in this issue. Nor does our list by any means include all the exhibitions where bee-keeping is more or less in evidence, for—although important shows, of which we receive due notice, are never omitted—we are compelled to leave out many announcements of the smaller shows for want of space.

It also becomes quite plain that the more important agricultural societies are extending the encouragement given to the bee-department in former years. The Lincolnshire Agricultural Society has placed the entire management of the bee and honey show in the hands of the county B.K.A., to the manifest advantage of all concerned.

We may also add that the Royal Lancashire Agricultural Society is this year holding its Show at Liverpool, on August 3, 4, 5, and 7 next, and we wish to draw our readers' special attention to the classes for hives and honey, for which the Society is offering valuable prizes. The Lancashire County Council are undertaking the management of the lectures and demonstrations to be given at intervals on each day of the Show, and the Rev. J. F. Buckler, of Bidstone Rectory, Birkenhead, will act as judge. We beg to remind our readers that entries close on July 1, as do the entries of the Staffs Agricultural Society, whose show takes place at Wolverhampton on July 26 and 27, full particulars regarding which will be found on pages 256 and 257. We sincerely hope that bee-keepers will rise to the occasion now that the weather is favouring us so much, and give every possible support to the "Shows to Come."

THE "ROYAL" SHOW.

MAIDSTONE MEETING, 1899.

A second visit to the "Royal" on Thursday, the 22nd inst—though the weather was a complete change for the worse compared with that of the previous Saturday—still further emphasised our first impression of the excellence and completeness of the Bee-department of the Show, and how creditable it was in every way to British bee-keeping as an industry.

Admirably placed, so far as position—with the bee-tent erected close by in the ample space in front—the long length of shedding was filled from end to end with a capital display of bee-produce and the various appliances for securing the same. The only fault, if it could be deemed such, was the necessarily limited width of the main gangways. The space allowed would have been ample if only one side of each thoroughfare had been occupied with exhibits, but when both sides were filled with interesting things to which bee-keepers usually desire to give more than a passing glance, it will be understood how acceptable would have been another yard in width of "elbow room." As it was the crowds of visitors to the bee-show had, at times, to be so regulated as to pass in a continuous stream all going one way to avoid a block.

Of the exhibits themselves it would fill the space at our disposal several times over to do full justice; we must, therefore, be content with a very brief allusion to such items as require notice in the several classes comprising the schedule:—

Class 343. *Collection of Hives and Appliances*, with prizes of £4, £2 10s. and £1 10s. respectively, produced eight entries—all staged—as against six at Manchester in the Jubilee year and three at Birmingham in '98. Messrs. James Lee & Son, took first prize with a large and varied collection of high class goods, among which it would have been difficult to detect a single faulty article. Apart from the items enumerated in the schedule, there were among "distinct articles not specified" a small, but good, collection of optical goods such as are required for photographic and microscopic investigations in scientific bee-keeping. The collection also included several things not previously exhibited, the whole forming a capital display.

Mr. W. P. Meadows' collection which secured second place, was also a large and comprehensive display, including several novelties which, after a season's trial, will doubtless be heard of again. Among other things in this connection we noticed a new "combined porch and ventilating flight-board," several forms of transparent celluloid quilts, queen-excluders, regulating bottle-feeder and queen-cage, in all of which, save quilts, celluloid was used in lieu of zinc. We shall be very pleased if this material has full trial during the present season, so that its value to bee-keepers may be properly gauged in the hands of ordinary users. Some appear to consider that the tendency of celluloid to "buckle" when subject to heat is a fault to overcome, while others maintain, after trial as quilts and excluders, that the fault referred to exists only in the imagination; meantime it is well to reserve judgment. The material will soon make its way if useful, and reports *pro* and *con* are sure to be sent in before the year is out.

The 3rd prize was given to Mr. R. H. Coltman—a new aspirant for "Royal" honours—with a well displayed collection of clean looking goods, all of useful type. Among the extras or "distinct articles" we observed a large solar wax-extractor in which the combs for melting are supposed to be laid across iron rods—spread far apart—instead of being placed directly on the melting-plate in the usual way. How this is to work we

cannot quite see, and it gives one the impression that the idea is more theoretical than practical, for the combs will certainly fall through when subject to the temperature necessary for melting.

Of the two highly commended collections, staged by Messrs. J. S. Greenhill and F. Sladen respectively, the first-named ran Mr. Coltman so close for 3rd prize that, but for a hive not faulty in itself but—either inadvertently or carelessly—made so in staging, the positions might have been reversed. Mr. Sladen's exhibit was very neat, beautifully clean, and all the articles of good type and quality. Rather a small collection for such a strong competition, but very good withal. Mr. Varty fairly earned his commend, but the display was rather rough in finish. The same may be said of the unplaced exhibits staged in the class.

Class 344. *Most Suitable Outfit for a Beginner in Bee-keeping.* Price not to exceed 30s. (seven entries).—This was a fairly good class but showed no appreciable advance on that of last year when the class was first instituted. Mr. Meadows was placed first and Messrs. Lanaway second, thus reversing the positions held by the same exhibitors at Birmingham in 1898. The third prize went to Mr. Coltman for an outfit which, like the two first-named ones, included an extractor, while in all the other exhibits in the class this important appliance was omitted. In view of the fact that a reliable outfit, extractor included, can be sold at the price named, it seems almost hopeless to stage an exhibit omitting one of the most important items.

Class 345. *Observatory Hive, of not less than Two Frames, with Bees and Queen* (six entries).—Of the six hives staged, Messrs. Lee & Son were a long way in front of the others, their exhibit being one of the best hives we have ever seen for the purposes of "observation." The revolving arrangement—so frequently faulty—was about perfect, and the ingenious contrivance whereby the bees are made to take syrup from between two plates of glass is capital. It enables the observer not only to watch the action of the bee's tongue when fully extended, but to examine that organ at work through a magnifying glass, or, if necessary, with a microscope. Apart from this and other advantages, the hive was a model of good workmanship and construction.

The second prize went to Mr. Thos. Richards, for a good observatory of usual type, and the same may be said of Mr. C. T. Overton's third prize exhibit.

Class 346. *Observatory Hive, Single Frame, with Bees and Queen* (six entries).—The first prize here was secured by Mr. T. Richards, which, on the day of judging, apparently fulfilled the required conditions properly, and bore the appearance of having been successfully exhibited dozens of times. The comb appeared to hang correctly with what was naturally supposed to be double sheets of glass between the comb-face and the inner glass surface, and the hive was shown with sections above its single frame. When this is so, double glass below becomes a matter of course, or ought to be; but when we saw the hive five days after it was adjudicated on, lo! the bees, taking advantage of the fine weather, had laid bare its fault in a manner there was no mistaking, for they had built brace-combs in the too-great space between the glass and face of comb next to it. This, of course, made plain the non-existence of an inner glass, as the judges supposed there would be, and created an anomaly in judging such as rarely occurs, and which, without this explanation, would not be easily accounted for.

Mr. Playford's hive (stocked with Ligurian bees) and that from the Horticultural College, Swanley, were both good, deservedly receiving 2nd and 3rd prizes in the order named.

Class 347. *Complete Frame-Hive for General Use* (ten entries).—While containing some good hives, nothing very striking or new was staged in this class, Messrs. Lee & Son securing 1st prize with a hive of the "W.B.C." type (price 24s.), the floorboard of which could be lowered in front by means of a thumbscrew. This simple contrivance—affording free ventilation during hot weather—will be a boon to bee-keepers who wish to attain the object sought without risk of stings to themselves or loss of bee-life by crushing.

Mr. F. Sladen's 2nd prize well merited the award, being of good make, and exceedingly cheap at the price (17s. 6d). The 3rd, secured by Mr. C. T. Overton, was a useful hive of well-known type (price 24s.). Messrs. Lanaway & Son and R. H. Coltman well deserved the commend awarded for their respective hives.

Regarding the remainder of the exhibits in this class, we were sorry to see several of the best hives staged passed over owing either to faults in "fit," easily remedied, or to errors in construction which ought to be guarded against by any one possessing any practical knowledge of bee-keeping.

Class 348. *Inexpensive Frame-Hive for Cottagers' Use* (nine entries).—This was a decided improvement on the previous class; the hives appearing, on the whole, to be constructed of superior wood, and certainly conveying better value for the money than the higher-priced ones. All the awards were well earned, and the fact that seven of the nine exhibits received recognition at the hands of the judges testifies to the keenness of the competition and the excellence of the class as a whole. The 1st prize hive of Mr. Coltman reminded us forcibly of a well-known hive usually staged by another maker. Anyway, it deserved its place in the awards, as did Mr. Meadows' 2nd prize hive; the special merit of the latter being its usefulness for conveyance to the heather. Indeed, wherever this particular feature is made a point of in the schedule, Mr. Meadows' exhibit would be difficult to beat.

Mr. Greenhill's 3rd prize was a sound and useful hive, as was also Messrs. Lanaway's h.c. and "reserve number," both being of reliable type, and, respectively, well worth the stated price.

Mr. Meadows also got a h.c. for his well-known 8s. 6d. cottagers' hive, and Mr. Varty had both his exhibits in the class commended.

Class 349. *Honey Extractor* (five entries).—It would appear that this class has become so regularly a "walk over" for one exhibitor that we almost wonder at its being retained in the schedule of prizes. Mr. Meadows again took the chief honours for exhibits, securing 1st, 2nd, and v.h.c. with capital machines of the best type, viz, the "Cowan" reversible, the Geared "Raynor," and the well-known "Guinea" in the order named. Mr. T. Louth was commended for his improved patent "Unique," price 25s.

Class 350. *Any Practically Useful Appliance Connected with Bee-Keeping*, introduced since 1897 (14 entries).—The whole of the exhibits entered being staged, this made up a moderately large class; and let us say at the outset, it was extremely disappointing to see no award made. Among several reasons, more or less accounting for this, it may be said that several of the larger and more important appliances should have been accompanied by a written description (however brief) of the points of merit claimed for them by the respective inventors. It does scant justice to an exhibit when no explanation is afforded as to what an appliance is capable of, or no word of guidance regarding the method of working is placed before judges to enable them to more readily gauge its usefulness or otherwise for the purpose intended. It is all very well to say—"Judges should find this out for themselves"—but, as we have said, it does not always conduce to securing a full measure of justice to the exhibit before the adjudicators.

Several items among those shown—being more or less tentative in character—may be regarded as awaiting trial at the hands of ordinary bee-keepers before their true value can be properly appraised. Among these we include all the goods made from celluloid, because, while it is known that persons possessing the requisite knowledge of the material referred to can make it answer very well indeed, a few others declare the opposite, and as it is always best to err on the safe side, it will do good and no harm to defer judgment till after a full season's trial.

The combined porch and ventilated entrance of Mr. Meadows will also no doubt be "touched up" in a few details, and appreciably improved thereby before being shown again.

Our earlier remarks on the necessity for written descriptions apply chiefly to the "Improved Swarm-Catcher" (patent applied for) and the Wax-Extractor, for which, we learn, an American patent has been secured.

Regarding the swarm-catcher, we suppose it is intended as an improvement on its prototype known as "Hole's Patent Hinged-Plate Self Hiver," but beyond a change in the material used for the hinged plate, we could—minus further particulars—see very little difference between the one shown and the original it so closely resembles.

(*Completion of Report next week.*)

DEALING WITH FOUL BROOD.

SPORES AND BACILLI — GERMICIDES AND ANTISEPTICS.

So much uncertainty seems to prevail, when dealing with the subject of foul brood, even among bee-keepers of intelligence and culture, regarding the need for clearly differentiating between spores and bacilli, and also between antiseptics and germicides, that we are glad to have the opportunity of reprinting from *Gleanings* the following article, written for that paper by our senior Editor, a careful perusal of which will, we trust, have the effect of enabling any one to see the importance of avoiding any confusion of terms. We have readers who innocently talk of certain drugs being put forward as "cures," just as if they had ever been called such in this journal, and it would take so much contradicting that we have long given up the task. However, we feel sure Mr. Cowan's article will be as widely appreciated here as in America as serving to put matters right.—[W. B. C.]

Foul-brood Germs.

By Thos. Wm. Cowan.

Since I wrote to you on this subject I have received *Gleanings* for April 15, and in it I find two letters in reference to which I should like to make a few remarks. Mr. Harry S. Howe, writing with regard to the several boilings in order to secure the sterilisation of honey, points out that "the spores of *Bacillus alvei* do not develop in honey, nor can they live in honey except in the spore condition." I would agree with this entirely if it were restricted to honey in a *normal* condition. But it would indeed be a bold person who would venture to say that honey is always in this state, and that it cannot be in such an abnormal condition as to form a suitable medium for the germination of spores of bacilli. We know the living spores remain dormant, and bacilli cannot grow in honey, because in a normal condition it has an acid reaction; but should it, from any cause, become even slightly alkaline, there would then—if other conditions obtained—be no hindrance to their germination and development. It was with a view to the possibility of such a condition that I wrote advisedly in my last letter respecting several boilings of honey—"*supposing* a nutrient medium to exist in the honey, the unaffected spores would germinate into bacilli, and could be destroyed in the next boiling."

On page 310 there is "A new treatment of foul brood" by our old friend Rambler, and a recommendation to uncap a comb affected with foul brood, and wash it under a faucet of water running with considerable force. I should like to point out the great danger of this plan. The combs that are uncapped contain thousands of spores; and in washing, many of these would be driven out of the cells and spread by the running water, we know not where; and as they are not destroyed they are at any time ready to restart the mischief. When the combs are in this condition it is always safer to burn them, as we thus destroy all the spores. Then, as to formalin, I do not think it would have any more effect upon the spores than any of the other drugs have, although it may be equally efficient in destroying bacilli. It seems to me that, in many cases, the non-success of drugs has been owing to not properly understanding the great difference between spores and bacilli. Now, in any inquiry into the influence of one drug or another on micro-organisms, it is necessary to bear in mind that the influence of certain conditions on the micro-organism may be a twofold one. First, the condition may be unfavourable to the growth of the organism; and, second, the condition may be fatal to the life and existence of it. The second condition involves, *a fortiori*, the first; but the reverse is not the case. A great deal of confusion has arisen on this subject owing to the failure to distinguish between these two propositions. We constantly hear of this or that substance being an "antiseptic," which means that it is inimical to the growth of micro-organisms, or that it is a "germicide," meaning that it kills the organisms. The scientific man, of course, knows and understands the difference between the two; but the great bulk of people do not, therefore they expect drugs to perform impossibilities. I see Rambler calls formalin an antiseptic, therefore it is probable that it will prevent the growth of spores only while in contact with it, or kill the bacilli. This is precisely the behaviour of all the other drugs used, and they can do no more. Spores are invested by a thick double membrane; the external sheath is supposed to be cellulose, and the internal one probably of a fatty nature, both being bad conductors of heat. It is this double membrane that gives spores this great resistance to high and low temperatures, to acids and other substances. I do not think any amount of soaking in water would render the spores open to the influence of diluted formalin. Now, we know there are many antiseptics, and these can be used effectually against foul brood. Carbolic acid, phenol, thymol, salicylic acid, naphthol beta, perchloride of mercury, and many other substances, even when considerably diluted, prevent the growth of bacilli.

Now, we have had considerable success in England in our treatment of foul brood, which involves the use of drugs. We call this an antiseptic treatment, because it is the same in principle as the antiseptic treatment in surgery, which has made it possible to perform with success the marvellous operations of the present day, and such as could not have been effected without almost certain loss of life from blood-poisoning induced by the growth of various micro-organisms. We insist on an antiseptic always being present in the hive or in the food we give to our bees. No syrup or honey is given without first being medicated, and the antiseptic used kills any bacillus that may be growing, or prevents the spore from germinating, although it does not kill it. Then we know that there are certain chemical substances which evaporate at the ordinary temperature of the hive, and whose vapours prevent the growth of bacilli, although they do not destroy them. Among these are eucalyptus, carbolic acid, phenyle (or creolin), lysol, camphor, naphthalene, and others. For convenience and economy we use naphthalene, and have some of this always present in the hive. Our treatment is this: If we detect the disease in its earliest stage, before any of the affected larvæ are capped over, we simply feed the bees with syrup medicated with naphthol beta, because at this stage there are no spores present. The medicated syrup is used by the nurse-bees in preparing food for the larvæ, and in this way the bacilli are destroyed. It is, however, seldom that the bee-keeper is sufficiently expert or alert to detect the disease at this stage, but more generally notices it only when the combs have irregular patches of brood, with sunken and perforated cappings to the cells containing the coffee-coloured mass inside. In this condition the cells are crowded with innumerable spores, and the treatment just mentioned would not have the slightest effect upon them. If the colony be weak we destroy the bees, combs, and quilts, and disinfect the hives. We thus destroy the spores and so remove the source of infection. Should the colony be strong in bees we make an artificial swarm of them, confine them in an empty hive, and feed on syrup medicated with naphthol beta. We use this drug because it is non-poisonous or corrosive, and has no odour repugnant to the bees, is a powerful antiseptic, and can be used in great dilution, thus rendering it economical. The frames, combs, and quilts are then burned, and the hives disinfected by being either steamed or scrubbed with boiling water and soap, and then painted over with a strong carbolic-acid solution. The bees are confined in the empty hive for forty-eight hours, by which time all the honey they may have taken with them will be consumed, and such of the bees as are diseased will have died off. Those remaining are then put into a clean hive furnished with full sheets of comb foundation, and are fed with medicated syrup for a few days longer.

With this treatment, when faithfully carried out, we have had considerable and very gratifying success. The whole secret of this suc-

cess lies in having the drug ever present to act on the micro-organism, and either kill it or prevent its development and growth. I do not see why formalin, if used in the same way, should not be as efficacious.

[I am sure we bee-keepers of the United States are exceedingly obliged to Mr. Cowan for the valuable information he has given us, and for the clear way in which he has discriminated between spores and bacilli.

As I understand him, the purpose of medicating syrup fed to bees is to kill the spores immediately on their entrance to the bacillus form, as well as the bacilli themselves. Drugs can in no sense kill spores; but if the syrup is medicated with the proper antiseptics, when the spores do hatch (if I may adopt an unscientific term) the microscopic life is killed at once.

This naphthol beta is something that I believe American bee-keepers can use with profit, especially those who have had foulbrood in their vicinity, or at least have had it in years gone by, and are troubled with its reappearance occasionally. If every year all the syrup fed to the bees in such apiaries is medicated with naphthol beta, the time will come when the last traces of the disease, even in the spore form, will be wiped out.—Ed. *Gleanings.*]

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

PURE CYPRIAN BEES.

[3722.] Will you kindly allow me space to address a few words through your valuable journal to the progressive bee-keepers among its readers on the improvements of apiculture in Great Britain by means of the Cyprian bee?

In the year 1878, when Cyprus became a possession of the British Government, Mr. D. A. Jones, of Canada, and Mr. F. Benton, of the United States of America, visited this island in search of Cyprian bees. These gentlemen had apparently gathered information from ancient history respecting the renown of the bees of Cyprus, regarding which Virgil says:—"The honey of the excellent bees of Olympus, chain of mountains in Cyprus, nourished the gods of antiquity."

We know that Mr. Jones took with him to Canada a large number of Cyprian queens in nuclei; while Mr. Benton remained in Europe, and visited Cyprus every summer for several years for the purpose of rearing and exporting queen bees to Europe and America. It is, I think, admitted that the bees exported in this way proved themselves very superior in respect of colour, beauty, and honey production. And the prices realised for these queens were as high as £1 and £1 10s. each.

Mr. F. Benton continued his annual visits to Cyprus for about seven consecutive years (or until 1885), after which time he established himself at Munich (Germany), and while there obtained Cyprian queens from me. He did this after having taught me how to pack bees safely for exportation by letter-post.

During the thirteen years since 1885 I have exported a great many queens to various parts of the world, mostly to the United Kingdom; but other occupations did not permit me to devote much time to queen-rearing. I have now, however, made my mind to push on the business to its fullest extent, and, by so doing, hope to render valuable service to the bee-industry of the country under the flag of which I have served and lived now for twenty-one years past. Moreover, there is no other person in this island who raises queens for sale or export.

I regret to see that while many bee-keepers know the value of Cyprian queens and desire to work entirely with Cyprian bees for honey production, yet comparatively few are willing to pay 12s. 6d., or even 10s. 6d., for each queen, though properly mated and tested before shipment. And it is more than probable that most of those who have already obtained queens have used them for the sole purpose of breeding therefrom similar queens. But I maintain that by so doing they have lost both money and time, simply because the resultant virgin Cyprian queens got mated with either black or Italian drones. It is stated by experts that most hybrid bees are difficult to handle, especially those from blacks and Cyprians, or blacks and Italians; but these same experts know that Cyprians when pure are not only quiet to handle, but are invaluable for honey-production, as being the most active race of bees known.

The reduction of my original price of 16s. for each queen to 12s. 6d., or 10s. 6d. if more than one is taken, was due to your kind advice given to me in March last, for which I thank you very much, and I regret that I did not then quite see the necessity for reducing prices still lower, in order to bring pure Cyprian queens within the reach of all classes. I now realise that to encourage bee-keepers to obtain direct from Cyprus as many queens as they require for giving a fair trial to pure Cyprians, the price must be still further reduced, and in consequence my charges are as per amended advertisement for future issues of your paper.

Under these circumstances it is advisable to try the honey producing line which I am sure will prove very satisfactory, and by so prudently acting the time will come, within a few years, to reproduce pure Cyprians locally and safely.

I believe you will notice that what I have said above is very little in favour of my interest, and much in favour of the interests of British bee-keepers. — M. G. DERVISHIAN, *Nicosia, Cyprus, June* 7, 1899.

[It is in some degree a departure from our rule to publish the above communication, but Mr. Dervishian's letter contains so much of interest to readers in general that its insertion is fully justified. We, therefore, without expressing any opinion one way or other as to the Cyprian bee, simply draw attention to the recently introduced Imperial penny post, the advantages of which are extended to Cyprus as being a British possession, while the fact of Mr. Dervishian (though a native of the island) speaking and writing English, removes the difficulty often experienced in correspondence between foreign queen-breeders and their customers in this country. Our advice, as to reduction in price of queens, was given to Mr. Dervishian from the *business* point of view, when he wrote us as to advertising in our pages in March. We knew that the prices he proposed to charge for queens (16s. each) would be altogether too high, and consequently gave no hope of sales resulting unless a more moderate figure was asked.—EDS.]

MR. WELLS' CAKE OF WAX.

[3723.] I observe on page 184 of your issue for the 11th ult. a Scotch correspondent wants to know how Mr. Wells "gets his big cake of wax." I cannot answer for Mr. Wells, but I can tell how I got a big cake in 1896. I have been a bee-keeper for a long time, though not always a bar-framist. When, however, I started with frame-hives I tried several plans for getting surplus honey, and, after reading about shallow-frames in the B.J., I tried a few boxes of them in '95 and found it answer well. I therefore, during the following winter and spring, made up over thirty shallow-frame boxes and about 300 shallow-frames for use in them. I did not put foundation in the frames, but merely run a little ridge of melted wax along the under-side of top-bar. I put nine frames in each box over the ten frames of brood-nest, with queen excluder between. I had fourteen colonies at work during '96 in this way. Some of them filled two, and the strongest nearly three, boxes of these shallow-frames. Here let me say I don't need a "ripener," as my honey stays on the hives until ripe. That year, however, when I removed the surplus, my "Little Wonder" extractor was broken, so I cut the combs up in the old-fashioned way and let the honey drain out as in earlier days. When I totted up the weights I found I had over 8 cwt. of honey, and was able to make over thirty gallons of mead. I also sold 30 lb. 6 oz. of beeswax, the buyer giving me top price, saying it was the best sample he had seen that year. We had also about 2 lb. of wax from the odds and ends for home use.

Since then I have got a better extractor, and preserve a lot of the combs for next year's use. In this way we don't get so much wax as formerly, nor, indeed, so much honey either somehow, and it makes one think there is not so much profit in keeping old combs for use in future years as some bee-keepers appear to think. I should add that a few old combs were melted along with the new ones specified above, as there are always a few old combs needing melting down every year.

I worked three colonies for sections in '96, but the weight in honey did not equal that from the shallow-frames. None of the seventeen colonies swarmed in 1896. — A KEEPER OF BEES, *Wilts, June* 19.

PACKING BEE-GOODS FOR TRANSIT

ARE MANUFACTURERS TO BLAME?

[3724.] I am surprised to see so much fuss made about packing bee-goods. The matter rests entirely with purchasers; if they are willing to pay for extra packing, I am quite sure manufacturers would be delighted to carry out instructions at a reasonable price. We have even gone so far as to offer to *lend* extractor-crates, and then our customers think much of the carriage back. The rule is refusing to pay for packing, and while this lasts makers cannot be expected to further reduce their small profits in expensive packing.—W. P. MEADOWS, *Syston.*

[3725.] I am glad to find myself not the only sufferer, as I hope that public attention having been drawn to the damages sustained to extractors, makers will adopt a better style of packing. One has promised to do so, and I shall give him my order for honey and wax extractors. I daresay the wire-netting might answer, but a blow that would make holes in an extractor would probably make its effect felt, in spite of wire-netting.—ALPHA, *Hull.*

NOTES FROM THE WEST.

[3726.] Your correspondent W. Loveday (3691, page 202) takes exception to some of the methods pursued by myself, as mentioned in my last notes *re* artificial swarming in May, and giving bees sweetened water in troughs during early spring (page 194). Kindly allow me to say in reply that, in the former case, my action was warranted by the local circumstances, and in that of the latter it is too late in the day of practical bee-keeping to discuss the question; my own experience, as well as that of many others who keep large apiaries, has taught too much on that point.

Up to May 27 stocks were almost starving in this locality through cold and wet. The 28th, however, brought a change, and in less than three weeks the extractor had been brought into requisition. One hive of my

own, though at starving point (except for feeding) on May 27, had stored a surplus of fifty or more pounds on June 17.

Queen mating has been very extraordinary during the three weeks of sunshine. I had twenty-seven queens hatched from one mother on June 2 and 3, and by the 11th every one of these were laying. They were bred in artificial cells, made a shade larger than ordinary natural ones.

A great difficulty has been found in getting bees to enter "that Japanese puzzle-box—a rack of sections," as Mr. R. A. H. Grimshaw called them on p. 221. The only way in which I have succeeded has been to place the racks of sections between a partially filled box of shallow worked-out combs and the brood-nest, and afterwards moving them to another hive for completion, the cold nights undoubtedly being the main cause of the trouble.—AMATEUR, *Totterdown, Bristol.*

BEE-KEEPING IN THE RIVIERA.

(*Concluded from page* 241.)

[3727.] The spring of 1899 began very mild, with plenty of rain and fair weather in turns, indeed, everything promised well for bee-keepers. All went well, and in May the orange-blossom came forth, filled the trees and the whole district with its perfume. But the mistral of Provençals—a north-westerly wind—began to blow, and was as redoubtable in its nectar-destroying effects as the simoom to the Egyptian or the sirocco to Orientals. Our honey pails remained as empty as they never have been since 1888 in Palestine. A few stray swarms came to lodge in some empty hives about the beginning of May in several of my apiaries. I always keep a few empty hives ready, but those wanderers were only hunger-swarms. Although I seldom have natural swarms in my apiaries, relying more on the artificial system, yet the increase was vexingly slow—no fifteen to twenty brood-frames in hives as I often have in other springs. The summer crops, however, now promise fair, but "there's many a slip 'twixt cup and lip" in our blessed Alpine region.

The "fixistes" (as we call the old-fashioned bee-keepers here in France, as opposed to "mobilistes" or frame-hive apiarists) have no more notion whatever as to which flowers yield honey. Their knowledge consists in awaiting swarms between April and May. They move to the uplands after May, in the usual cork cylinder-hives, or else four-boards hive. The open end below is usually placed on a flat stone or rock, and although it makes it easier to remove in summer (a sack being tied over this opening, as mentioned page 222) yet the bottom is left loose simply to facilitate easy "brimstoning" in September. Honey and wax merchants buy the full hives with the killed bees by weight, when the combs are scraped out, the tare is deducted and empty hives taken home. The "fixistes" keep half-a-dozen or so of well-stocked hives, as "seed" for next season's swarming. The only good such brutal treatment may have is the complete destruction *yearly* of foul brood. The yield of honey differs also according to the season; whilst some hives were known to weigh 100 lb. and above (the tare is between 10 lb. and 15 lb.) in one season, since 1896 the average yield has been below 10 lb. a hive.

Bar-frame hives have at last taken a strong foothold in our poor "Departement des Alpes Maritimes," several hundreds of them being carried about by myself—for myself and different progressive campagnards. Occasional visits to encourage them in their proceedings and give them useful hints are pleasant rambles on the wheel, but an unthankful task, completely disinterested, as pecuniary income, causes many to look for hidden profits.—B. L. J. BALDENSPERGER, *Nice, France, June* 10.

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING JUNE 24, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
June 18....	29·88	61·0	72	52	20	61·3	·10
,, 19....	29·70	55·4	68	48	20	57·3	·48
,, 20....	29·43	61·2	68	51	17	58·9	·05
,, 21....	29·60	66·8	73	53	20	62·3	·01
,, 22....	29·64	58·8	60	56	4	57·9	·16
,, 23....	29·82	60·2	68	54	14	60·5	—
,, 24....	30·00	59·7	69	55	14	61·5	—
Means	29·72	60·8	68·3	52·7	15 6	60·0	·80*

* Total, ·80 in.

Mean vapour tension, 0·400 in.; mean relative humidity, 75 per cent.; mean temp. of the dew point, 52°·5. The rainfall, viz., ·80 in., =18,098·40 gallons, or 80·80 tons to the acre, or 4 lb. to the square foot. For the week ending June 10, the mean temp., viz., 59°·1, was +3°·3, and the rainfall, viz., nil, −·50 in.; for the week ending June 17, the mean temp., viz., 56°·4, was −0°.8, and the rainfall, viz., nil, −·47 in. The mean temp., May 28 to June 17, viz., 56°·3, is +0° 5, and the rainfall, viz., nil, −1·50. The mean temp., January 1 to June 17, viz., 48°·9, is +5°·0, and the rainfall, viz., 8·83 in., −1·29 in. Absolute drought on twenty-four days, viz., May 25 to June 17.

FRED. COVENTRY.

Duddington, Stamford, June 26.

Queries and Replies.

[2227.] *Moving Stocked Hives Twenty-five Miles in Summer.*—I left a new hive, fitted with full sheets of foundation, with friends twenty-five miles from here, to be forwarded to me in time for the reception of a bought swarm which I am expecting every day. In

the meantime my friends have utilised the hive in question by placing in it an abnormally large vagrant swarm. The bought swarm, when it arrives, must be hived in a skep, as I have no other frame-hive quite ready. I therefore ask—1. When shall I be able to get the hive and stock now in possession brought here, and what precautions must be taken in packing? 2. I apprehend that the stock in the skep must remain therein until breeding is over, say September, and then be driven into a new hive with full sheets of foundation? I wish to avoid transferring if possible.—TYRO, *Yorkshire.*

REPLY.—1. Unless the "full sheets of foundation" referred to were "wired," we should hesitate about moving the stock twenty-five miles before cold weather sets in—say, in October next. A different opinion might, of course, be arrived at if we could inspect the combs to judge how far they would stand the jolting inevitable on so long a journey by road; but so many breakdowns occur with newly-built combs that it is dangerous in any hands, and especially so in those of inexperienced bee-keepers. 2. If the bought swarm is not already hived in skep, we should be tempted to order a hive at once in which to place the bees. It would be real economy to take this course. An immense deal of trouble and risk would be avoided in so doing.

[2228] *Transferring Old Combs to New Hives.*—Thanks to a perusal of the "British Bee-keepers' Guide Book," I have successfully hived two swarms of bees (my first attempts) into two hives made by myself on the plans recommended by Mr. Cowan. The swarms came out of two old hives I bought; they are frame ones, but very roughly constructed, and the combs are built all across the frames from one frame into the other. I shall be glad if you can tell me what is best to do with them. I want to get the bees out of the old hives into two new ones, but don't know quite how to set about it. A few hints on the best method to pursue will be esteemed a great favour.—F. C. C., *Bishop's Waltham.*

REPLY.—We should not advise a beginner to attempt such a task as transferring in the case as stated, but twenty-one days after the swarm issued we would set the old hive above frames of new one, and after smoking the bees down into the lower hive, would slice the combs through (beginning with an outside comb) and remove each frame as it was freed. There will be no brood in the way, and although a difficult job for an amateur to avoid killing any bees, we see no easier plan of transferring under the circumstances.

[2229.] *Dividing Stocks for Increase.*—About four or five weeks ago I put a second frame-hive over the bottom one in order to induce the bees to go up, and thus enable me to make two lots of them when the bees had taken possession above, and so save swarming and the risk of losing them. I noticed the other day that a good number of the bees had gone up, and so I ask, When can I remove the top hive and make sure they have a queen in both lots? 2. I have another lot that don't seem to take to the sections. Why is this?—J. P. C., *Wallington.*

REPLY.—The plan proposed will not answer unless you understand the principles of making an artificial swarm from a frame-hive. It involves getting the queen and a couple of frames of brood into one of the two hives (no matter which), and setting it on the old stand; then moving the hive with all the bees and remaining combs of brood on to another stand some distance away, wrapping the latter up as warm as possible and reducing the entrance to keep the hive warm. All the old flying bees will join the queen, and the others will raise a queen for themselves. 2. Bees will take to sections now that weather is favourable.

Bee Shows to Come.

June 30 at St. Ives.—Hunts B.K.A. annual show of honey, hives, &c. Open classes. Schedules from C. N. White, St. Neots.

July 13 and 14 at Louth.—Honey, Hives, and Bee Appliances in connection with the Lincolnshire Agricultural Society. Bee Department under the management of the Lincolnshire B.K.A.

About the Middle of July, in the Home Park, Windsor (the date to be fixed by her Majesty the Queen).—Show of Honey and Bee Appliances, Berks B.K.A. (Windsor District), in conjunction with the Prince Consort's Association. Open Classes for Hives and Appliances, also Open Classes for Three Sections and Three 1-lb. Jars (free entry). Exhibits to be sold for the benefit of H.R.H. Princess Christian's Nursing Fund. Schedules from Mr. W. S. Darby, Hon. Sec., Consort Villas, Clewer, Berks. **Entries close July 3.**

July 19, 20, and 21 at Hull.—Bee and Honey Show in connection with the Yorks Agricultural Society.

July 19 at Pembury, Tunbridge Wells.—Honey Show in connection with the Gardeners' Flower Show. **Open class** for this season's honey. Schedules from W. Kemp, 2, Hill View, Pembury, Tunbridge Wells. **Entries close July 8.**

July 21 and 22, at Knowle.—The annual exhibition of the Bristol, Somersetshire, and South Gloucestershire B.K.A. will be held in connection with the local Horticultural Society's show. Schedules from Miss H. Dawe, Long Ashton, near Bristol. **Entries close July 15.**

July 26 and 27 at Wolverhampton.—Annual Bee and Honey Show of the Staffs. B.K.A. in connection with the Staffordshire Agricultural Society's Show. Open classes for Sections, Extracted Honey, and Bee Appliances. Schedules from Ellis E. Crisp, Sec., S.B.K.A., 8, Jesson-street, Coventry. **Entries close July 1.**

July 27 at Cambridge.—Honey Show in connection with the Cambs. and Isle of Ely Agricultural Society. Open class for single 1-lb. jar of honey. Schedules from C. N. White, St. Neots.

August 2 at Henbury, near Bristol.—The Henbury District B.K.A. show of honey, &c., in connection with the Horticultural Society's show. Open classes for six 1-lb. sections and six 1-lb. jars, extracted honey. Schedules from C. A. Newman, hon. sec., Henbury, near Bristol. **Entries close July 25.**

August 2. In Neston Park, Neston, Wilts.—Honey Show in connection with the Atworth and District Horticultural Show. Seventeen Classes for

Honey and Bees, including Single 1 lb. Jar and Single 1 lb. Section, with no Entry Fee. Schedules from J. P. Inkpen, Neston, Corsham. **Entries close July 26.**

August 3 at Loughton, Essex.—Honey Show in connection with the Loughton Horticultural Society Annual Exhibition. Four classes for honey open to County of Essex. Entry fee, 6d. Schedules from C. E. Skinner, Hon. Secretary, Loughton. **Entries close July 29.**

August 3, 4, 5, and 7, at Liverpool.—Bee and Honey Show in connection with the Royal Lancashire Agricultural Society. Special Classes and Liberal Prizes for Honey, &c. Lectures in Bee Tent. Schedules from 34, Castle-street, Liverpool. Jas. Birch, Secretary. **Entries close July 1.**

August 5 at Helsby, Cheshire (in connection with the annual flower show.) Open classes for extracted honey and bees-wax. Schedules from Dr. Briant, secretary, Helsby, Warrington. **Entries close July 31.**

August 7 at Beddington Park, near Croydon.—Surrey B.K.A. Annual Show, in connection with the Beddington, Carshalton, and Wallington Horticultural Society. Increased prizes. Five Open Classes, including single 1-lb. jar and section, with free entry. Schedules from F. B. White, Hon. Sec., Marden House, Redhill. **Entries close July 30.**

August 7, at Melton Constable Park.—Annual Honey Show of the North Norfolk B.K.A. Three open classes, including one for single 1-lb. jar of honey. Schedules from Hon. Sec., C. J. Cooke, Edgefield, Melton Constable. **Entries close July 28.**

August 7 and 8, at Delapre Park, Northants.—Northants B.K.A. Honey Show in connection with the Horticultural Exhibition. Three open classes with special prizes, including one for single 1-lb. jar of honey (entry free), six prizes, first prize, 20s. Schedules from Robt. Hefford, Hon. Sec., Kingsthorpe, Northants. **Entries close August 1.**

August 9, at Marlow, Bucks.—Annual Show in connection with the Marlow Horticultural Society, under the auspices of the Berks B.K.A Bees, Hives, and Appliances, Honey, &c. Eleven Open Classes. Liberal Prizes.—For schedules, apply to A. D. Cripps, Hon. Sec., High-street, Marlow. **Entries close August 5.**

August 16 and 17 in St. John's Schoolroom, Blackpool.—Annual Show of the Blackpool and Fylde Horticultural Society. Exhibition of honey under the auspices of the Lancs B.K.A. Open classes for twelve 1-lb. sections and twelve 1-lb. jars extracted honey, with prizes of 20s., 10s., and 5s. for each. Schedules from R. Atken, Sec., 17, Devonshire-road, Blackpool. **Entries close August 7.**

August 25 and 26, at Dunfermline, N.B.—Bee and Honey Show, West of Fife and District B.K.A., in connection with the Horticultural Society. Schedules from Geo. Weston, Sec., Grant's Bank, Dunfermline. **Entries close August 22.**

August 29 at Northwich.—Cheshire B.K.A. Show, in connection with the Cheshire Agricultural Society. Open classes for honey, wax, and single hives Schedules (shortly) from Mr. T. A. Beckett, St. Werburgh's Chambers, Chester.

September 6 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 30.**

September 13 and 14 at Derby.—Eighteenth annual show of the D.B.K.A., in connection with that of the Derbyshire Agricultural Society. Eight open classes, including two with free entry for 1-lb section and 1-lb. jar of honey. Schedules from F. Walker, hon. sec. D.B.K.A., 64, Gerard-street, Derby. **Entries close August 31.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

E.E.B.S. (N. Devon).—*Dealing with Slightly Diseased Stocks.*—1. With only a single diseased cell (since removed) in a stock, there is no need for such an extreme step as "sacrificing seven or eight beautiful combs of worker brood." We should get all the good possible from the two stocks on their present combs, seeing that the weather is now so favourable for honey gathering, and keep a close watch on brood-nest immediately the honey season comes to an end. Should the worst have happened and disease be again found, say at the end of July, there will be time to get the bees off combs and treat as a swarm by feeding. 2. It is, of course, quite possible that foul brood spores may have been carried into the hive by the bees visiting diseased stocks.

WILL HAMPTON (Richmond).—*A Home-made Bell Glasses from Jam Jars.*—We are obliged for your letter *re* the above, but a far better and easier made glass super for the purpose named may be provided by using the "cuttings" from the French glass-shades used for covering chimney-piece clocks and such things. These may be had of various diameters for a few coppers each (we used to get them at about 2s. 6d. per dozen), and with top and bottom boards of ¼ in. stuff, a very handsome super may be made for a few pence, holding from four to fourteen pounds (or more) of comb honey.

R. HIGGINSON (Southport).—*Hiving Swarms received on Frames.*—If the swarm reaches you in good order, with the foundation not broken down in transit, there will be no difficulty in lifting out the frames with bees and quietly placing them in the new hive. We should lift about three frames at a time, first drawing them apart to separate the bees as raised from the bulk. No harm will come to the swarm so long as the queen does not get damaged in the operation. You do not say whether full sheets or starters only of foundation were fitted in the frames.

J. H. (Derby).—A few cells of chilled brood; rest hatching all right. No disease in comb.

Samples of comb—all of which are more or less affected with foul brood—have been received from J. W. (Worcester), H. L. (Clewer), J. W. (Northum.), H. D. (Haverhill), and Salopian; three last bad cases, where burning is advised.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

WANTED, EXTRACTOR. Good exchange offered COLTRIP GILBERT, Stratton, Swindon. 272

WANTED, Geared EXTRACTOR (Cowan preferred). State condition and price. SAMWAYS, Maesybont, Llandebie. 268

WANTED, HONEY in Bulk. Exchange Yorkshire Canaries, Yorkshire Terriers, and Bar-frame Hives. Photo sent. WATSON, 104, Reuben-street, Leeds. 276

Prepaid Advertisements (*Continued*).

WANTED, BEES in Skeps. Also ENGLISH HONEY in large quantities. Sample and price, SWIFT, Skegness.

WANTED, an EXTRACTOR and HONEY-RIPENER in Exchange for the Works of Josephus, 1755. The History of the Church, 1683, in very good condition. More particulars. MORGAN, Myrtle Villa, Cowbridge. 269

23RD YEAR.—FERTILE QUEENS, '98 or '99, 3s. 9d., delivered. ALSFORD, Expert, Blandford. 277

SECTIONS, 7s. dozen. Light colour. Very good. LING, Shady Camp, Linton, Cambs. 274

FOR SALE, healthy STOCKS of BEES. PAVY, 3, Lower East Hayes, Bath. 270

PURE HONEY FOR SALE. For sample and price, write to DAVID HANCOX, Deddington, Oxon.

SELECTED FERTILE ENGLISH QUEENS, 5s. 6d. each, post free, in travelling cage. JEMEISON & BAKER, Bee Specialists, Dringhouses, York. 273

2-LB. HONEY TINS with lever lids, perfectly water-tight, 15s. gross. Sample, 3d. BULPITT, Camden-street, Birmingham. 271

PNEUMATIC Safety Bicycle, detachable tyres, 55s.; Exchange anything useful, Swarms, Breech-loading Gun. COULTHURST, care of Ramsbottom, 673, Rochdale-road, Manchester. 279

FURTHER REDUCTIONS. TRANSPARENT CELLULOID QUILTS, post free, 1s. 6d.; CELLULOID QUEEN EXCLUDERS, post free, 1s. 6d. R. H. COLTMAN, Bee-Appliance Maker, Burton-on-Trent.

BEE PLANT. Borage, 50 1s. 3d. TAYLOR, Birch Fold, Fallowfield, Manchester. 267

HONEY FOR SALE at once at 4d. and 6d. per lb Samples 2d. JOHNSON & SON, Soham, Cambs. 246

3 BLOW'S "WELLS" HIVES complete, nearly new. Exchange honey. Dr. WALKER, Kirkby-Stephen. 243

QUEENS. Only perfect and choice selected queens sent. Fertile, 4s. 6d.; Virgins, 2s. Grasmere Apiary, Ilminster. 236

ENGLISH MADE HONEY JARS (1-lb. screw-cap). 14s. per gross; sample, 6d. JAS. DYSON, Stainforth, Doncaster. F.N.

QUEENS, STOCKS, NUCLEI, and SWARMS. A few more orders can be accepted. List free. Rev. C. BRERETON, Pulborough, Sussex.

LACE PAPER for GLAZING SECTIONS. 100 strips, 7d., 200, 1s. 2d., 300, 1s. 6d., 500, 2s. 3d., 1,000, 4s. Post free. Best quality. Neat Patterns. W. WOODLEY, Beedon, Newbury.

COMFORTABLE APARTMENTS for Brother Bee-keepers visiting Douglas. HORSLEY, Merridale House, Empire-terrace, Top of Castle Drive, Isle of Man. 183

BRICE'S RELIABLE QUEENS. Well-known strain, one quality, one price. Mated tested Queen, 5s. 6d. Post free in perfected travelling and introducing cage. Safe arrival guaranteed. HENRY W. BRICE, 100, Brigstock-road, Thornton Heath.

2/2.—BEE GLOVES, as recommended by the great bee authority the Rev. W. E. Burkitt, 2s. 2d. per pair, post paid. Special terms for wholesale buyers. Manufactured by EDWARD REYNOLDS, Glove and Gaiter Manufacturer, Andover. 257

FOR SALE, 2 Stocks pure LIGURIAN BEES, 1898 queens, in Lee's hives, 30s. each. Swarms, when ready, 10s. 6d., 12s. 6d., 15s. Also small Apiary of 6 strong stocks and sundries. The lot £5. R. NESS, Expert, Olstead Grange, Ampleforth, York. 249

£600.—FREEHOLD.—SEVEN ACRES of valuable MARSHY ACCOMMODATION LAND, adjoining Borough of Saltash, four miles from Plymouth. Cow-house, Piggeries. Finest spot in England for Bees. COTTAGES also FOR SALE. MORTIMER, Home Park, Saltash, Cornwall. 209

QUEENS, Fertile 5s., Virgin 2s. 6d.
From prolific and selected mothers. Safe arrival guaranteed, in self-introducing cages. Unsolicited testimonials ad lib. HOWES, Melton House, Knowle, Bristol. Telegrams: Howes, Totterdown, Bristol.

ERNEST W. GODDARD & CO.,
THE MODEL APIARY,
Wash Road, NEWBURY,
Manufacturer of all kinds of Bee Appliances.
HIVES a Speciality! All sorts of Queens supplied.
P.S.—Good Centre for South-West of England.
Send for his Catalogue, post free.
Orders promptly attended to.

THE NEW "W.B.C." UNCAPPING KNIFE,
may be had retail from all dealers in bee-appliances price 3/-, or 5/6 per pair, and wholesale from
S. BLOMFIELD & CO.,
MANUFACTURING CUTLERS,
33, CHARLES STREET, HATTON GARDEN, LONDON.

THE YORKSHIRE BEE-KEEPERS' STORES.
WM. DIXON,
5, Beckett Street, Leeds.
UP-TO-DATE
HIVES and APPLIANCES
of every description.
SWARMS and STOCKS of BEES.
Catalogue post free.

PATRON:
Her Majesty the Queen.
PRESIDENT:
The Earl of Derby, K.G., G.C.B.

GREAT SHOW
AT
LIVERPOOL,
AUGUST 3rd, 4th, 5th, and 7th, 1899.
£3,438 in Prizes.
SPECIAL CLASSES FOR HONEY, &c., &c.
Entries Close July 1st.
Prize Lists from 34, Castle-street, Liverpool.
JAMES BIRCH, *Secretary.*

WANTED, 100 BEE-KEEPERS to buy the "**HAMPSHIRE SUCCESS" HIVE.** Made of best pine, and containing 10 standard frames, with metal ends; one dummy loose floor, with legs; porch and entrance slides; crate of sections, with foundation fixed; lift and roof. Complete, **10s. 6d.**
Illustrated Catalogue Free.
OWEN BROWNING,
Hive Manufacturer,
KINGSOMBORNE, STOCKBRIDGE, HANTS.

TO BEE-KEEPERS IN KENT.
BEES and BEE-APPLIANCES
of best quality
SUPPLIED PROMPTLY, CARRIAGE PAID to any Station in Kent, at low prices. Our Price List, free on Application, gives descriptions of **Sladen's Sections** and other Specialities.
F. SLADEN, Ripple Court Apiary, **DOVER.**

BEE
-APPLIANCES
-HIVES and
-KEEPERS' WOOD.
Illustrated Catalogue Free.
E. J. BURTT, Manufacturer, **Gloucester.**

Editorial, Notices, &c.

BEE AND HONEY SHOW AT HULL.

EXAMINATION FOR 3RD CLASS CERTIFICATES.

We are requested to state that an examination of candidates for the 3rd Class Experts' Certificates of the B.B.K.A. will be held on the show ground at Hull on July 20. Intending candidates should at once apply for particulars to Mr. R. A. H. Grimshaw, Hon. Sec. Yorks B.K.A., Hall-lane, Pottertown, near Leeds.

Apart from the above special notice, it should be borne in mind, by those desirous of securing the certificates referred to, that a somewhat lengthy notice is required by the secretary of the county association, in order that satisfactory arrangements for holding the examination may be made beforehand.

THE ROYAL SHOW.

MAIDSTONE MEETING, 1899.

(*Concluded from page* 251.)

Monsieur Laurent Opin, of Laon, Secretary of the Bee-keepers' Association of the department of Aisne, accompanied by other French bee-keepers belonging to the Association, visited the "Royal" Show on June 26. M. Brancourt, Crécy-sur-Serre, and M. Lépicier, Machecourt, were among the number, including several ladies, all wearing badges—a golden bee on a blue rosette. They were particularly intent on examining the bee-keeping appliances at the Show, and spent most of their time in the honey and bee department, which appeared to possess many attractions for them.

Our visitors manifested a good deal of interest in the working of the "Wells system," and as Mr. Wells resides within a few miles of Maidstone, they were escorted to Eccles, where they thoroughly enjoyed an inspection of the very apiary in which the double-queened hive had its start, and where the system has been worked successfully for so many seasons past.

We gladly take advantage of so opportune an occasion for including a view of this interesting "Home of the Honey Bee," taken from a recent photo, on page 263.

The weather was splendid, and the scenery attractive. The locality of Eccles is a miniature Switzerland, according to our visitors' account.

The part of France from which our friends came appears suitable for bee-keeping; they describe their frames as larger than ours, and the brood-nests contain more frames than we usually adopt here.

Mr. E. D. Till, Vice-Chairman of the B.B.K.A., took charge of the visitors, and being, fortunately, able to converse freely with them in their own language, there was no difficulty in giving and obtaining information as required by members of the party.

Two of the gentlemen—MM. Brancourt and Lépicier—again visited the Show on Thursday, the 27th, spending the greater part of the day there, and, being also present on that day, it afforded us much pleasure to personally welcome them on behalf of British bee-keepers generally. They were evidently keenly alive to the good points in our methods, as—with Mr. Till's help as interpreter—we did our best to explain to them, and evidently full of the kindliest interest in all the exhibits around them. Nor do we doubt that they carried home with them a good impression of British bee-keeping, and the bee department of the "Royal" Show of 1899.

Another visitor to the Show—this time, a Colonial one—was Mr. Jas. Wilshire, Vice-President of the New South Wales Bee-keepers' Association, and he was good enough to express his warm admiration of the Bee Department and all he saw therein. Mr. Wilshire also took great interest in Mr. Herrod's lecture and manipulations in the bee-tent, which he appreciated very much as "conveying valuable information in simple, well chosen words, that all could understand."

HONEY.

The three classes for comb honey in sections produced some exceptionally good exhibits; indeed, we have not for some years past, at a "Royal" Show, seen so fine a lot as were comprised in several of the best dozens of sections in the respective classes.

A most regrettable feature of this year's judging at Maidstone was the absolute necessity for disqualifying some half-dozen of the very best lots of sections, staged in the several section classes, for an infringement of the rule regarding the width of lace-paper used for decorative purposes. We need not here enter at any length into the merits of the case, beyond saying that when framing the schedule for '99 it was decided, after full discussion by the Council of the B.B.K.A., to insist on a comb surface of 3½ in. square being left free of covering on the face of each section. This condition was not complied with, and the unfortunate exhibits were perforce disqualified. Not the least annoying part of the business was the fact that no need whatever existed for any irregularity, seeing that the sections were good enough for staging without lace-edging at all.

With these observations, we may pass over Classes 351, 352, and 353 with the remark that all the prizes were well earned, despite removal of the formidable competitors referred to under the rule mentioned above.

Class 355. *Twelve 1-lb. Jars Extracted Honey* (thirty-three entries).—A capital class throughout, the quality of produce shown clearly proving that honey of 1899 will be good all round.

Class 356 *Twelve 1-lb. Jars Extracted Dark-coloured Honey* (thirteen entries).—This was in all respects a great contrast to the fore-

going, the quality, with few exceptions, being only poor.

Class 357. *Twelve 1-lb. Jars Extracted Honey of '98 or any Previous Year* (thirteen entries).—Another very excellent class, nearly all the honey being of fine quality and the competition keen in consequence.

Class 358. *Twelve 1-lb. Jars Extracted Heather Honey* (nine entries).—Rather a small display, but very fair in quality.

Class 359. *Twelve 1-lb. Jars Granulated Honey* (eighteen entries).—This, too, was a good class and well contested, some excellent honeys being staged.

Class 360. *Display of Honey in any form.*—Only four of the six entries were staged in this class. Nevertheless, they contributed very much to the general attractiveness of the department. Mr. Seymour took a well-earned 1st prize with a tasteful arrangement of good honey, well set up. Nor was Mrs. Longhurst very far behind with her 2nd prize exhibit. The 3rd and 4th prizes went respectively to Mr. Meadows and Messrs. Lee & Son for less pretentious but nice exhibits.

Class 361. *Beeswax not less than 3 lb.* (thirteen entries).—One of the best classes in the show for quality. Mr. John Berry took 1st and 2nd, staging splendid samples of wax, clean, sweet, and of excellent colour. Mrs. Longhurst was third with a capital sample of wax, good enough for a 1st at most shows. The 4th prize went to a rather dark sample, but possessing an excellent aroma, and several of the unplaced lots were also good.

Class 362. *Beeswax, not less than 3 lb., in marketable cakes, suitable for retail trade* (seven entries).—Some exhibitors in this class evidently lost sight of the fact that the *form* in which the exhibit was staged carried more weight even than quality of wax in this class. This will be borne in mind, no doubt, in future. It was, however, a good and instructive class, and the respective prizes were well earned.

We were disappointed to see the two final and important classes (365 and 366), for *Interesting and Instructive Exhibits*, the first of a *practical* and the second of a *scientific* nature, represented by no more than a single exhibit in each, notwithstanding the fact that three prizes of 20s., 15s., and 10s. were offered for competition in each class.

In the first-mentioned class Mr. Seymour took the award with a honey-comb design of the usual type.

Mr. F. L. Sladen was given a 1st in Class 366 for a very interesting scientific exhibit of an entomological character in shape of a well-arranged little observation hive, containing two nests of live humble bees; one on each side of a passage-way along which the bees could pass in and out of the hive while under full observation. Each nest and comb could be plainly observed, with the bees passing in and out, carrying honey and pollen just as do our hive bees. Moreover, the persistency of the little workers in making their way in through the crowd of outlookers was most interesting and amusing.

Mr. Sladen has evidently got the Bombi under perfect control, as his exhibit showed; and so generally interesting were the "wild bees' nests" to large numbers of visitors that we hope he will stage the little hive at next year's "Royal" with arrangements regarding flight as with other observatory hives.

NOTTS BEE-KEEPERS' ASSOCIATION.

ANNUAL SHOW.

The annual Show was held in conjunction with the Nottingham Agricultural Society at Mansfield, on June 7 and 8.

The entries were not quite so numerous as usual, owing to the last season being so bad, but some educational and interesting exhibits were lent by Messrs. Hayes, Scattergood & Herrod, and these helped to make the show interesting to the crowds who visited the tent.

Dr. Percy Sharpe and Mr. F. J. Cribb, gave demonstrations in handling bees and lectured to large audiences in the bee-tent each day. Dr. Sharpe also officiated as judge and made the following awards:—

Collection of Bee-Appliances.—1st, G. H. Varty, Etwall, Derby.

Hive for General Purposes.—1st and 2nd, G. H. Varty.

Honey Trophy.—1st, J. T. Faulconbridge, Bulwell.

Twelve 1-lb. Jars Extracted Honey (light).—1st, J. Herrod, Sutton-on-Trent; 2nd, J. T. Faulconbridge; 3rd, P. Scattergood, Stapleford.

Twelve 1-lb. Jars Extracted Honey (dark).—1st, J. Herrod; 2nd, J. T. Faulconbridge; 3rd, G. E. Puttergill, Beeston.

Twelve 1-lb. Sections.—1st, H. Merryweather, Southwell; 2nd, G. E. Puttergill.

Twelve 1-lb. Jars Granulated Honey.—1st, J. Herrod; 2nd, Geo. Smith, Bradmore; 3rd, H. Merryweather.

Shallow Frame of Honey.—1st, W. Lee, Southwell.

Honey Vinegar.—1st, P. Scattergood.

Beeswax.—1st, No award; 2nd, Geo. Marshall, Norwell.

Observatory Hive.—1st, G. Marshall; 2nd, J. Herrod.—*Communicated.*

LEICESTERSHIRE B.K.A.

ANNUAL SHOW.

The seventeenth annual exhibition of bees and honey was held in the Show Ground of the Leicestershire Agricultural Society, Leicester, on June 28 and 29. The exhibition was favoured with congenial weather on both days, and a good attendance resulted. Owing to the show being held a month earlier than usual the classes in the honey-department

were but sparsely filled, and the appearance of the spacious tent was far from satisfactory to those who were responsible for this branch of the show.

The manipulating tent came in for a fair share of patronage on both days. Lectures were delivered at intervals by Mr. H. M. Riley and Mr. Peter Scattergood, Stapleford, Notts, who were assisted by the hon. secretary, Mr. J. Waterfield, as manipulator.

Mr. Scattergood officiated as judge, and made his awards as follows :—

Observatory Hive with Bees and Queen.—1st, Thomas Richards, Church Gresley ; 2nd, S. J. Cooper, Leicester.

Twelve 1-lb. Jars Granulated Honey.—1st, S. J. Cooper ; 2nd, Mrs. Parkinson, Groby.

Twelve 1-lb. Sections of '98 or Previous Year's.—1st, Miss Cooper, Leicester ; 2nd, S. Spray, Melton Mowbray.

Twelve 1-lb. Jars Extracted Honey.—1st, Miss Cooper ; 2nd, S. J. Cooper ; 3rd, J. Waterfield, Kibworth ; h.c., F. Pickersgill, Withcote.

Display of Honey, in any Form and of any Year.—1st, S. J. Cooper ; 2nd, Mrs. Garner, Waltham.

Six 1-lb. Jars Extracted Honey (Members only).—2nd, Thomas Richards.

Six 1-lb. Sections of Comb Honey (Members only).—2nd, Mrs. Smith, Melton.

Six 1-lb. Jars Extracted Honey (Beginners only).—2nd, G. Proudman, Thrussington.

(*Communicated.*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to "The EDITORS of the 'British Bee Journal,' 17, *King William-street, Strand, London, W.C.*" *All business communications relating to Advertisements, &c., must be addressed to* "THE MANAGER, 'British Bee Journal' *Office*, 17, *King William-street, Strand, London, W.C.*"

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

NOTES BY THE WAY.

[3728.] The month of July has, in this district, opened cold and wet. Yesterday (Sunday) we found the fireside cheerful and comfortable, and in order to see to read, had to light the lamp by 7 p.m. This, too, so soon after midsummer. During the past fortnight the weather here has been unsettled with a low temperature, and in consequence very few bee-days. Yesterday, while returning from church, I noticed a good number of bees dead and dying in the high road, evidently unable to reach home owing to the rough west wind blowing ; the poor bees had become exhausted in the attempt to battle with the adverse elements.

That the bee-season has been a chequered one the advertisement columns of B.B.J. plainly tells ; contrast the many offers of swarms for sale in the issues of June 8 and 15 with that of the 29th, a fortnight later. This confirms my contention that the results of a cold May followed by an early flow of honey in June, does not result in a good bee-season. The sudden inflow of honey in June induced bees to fill the brood-chambers with honey instead of bees, and in consequence brood-nests got less instead of expanding, as would have been the case in an ordinary season. The great heat, day and night, also removed all need for the bees covering the capped brood for warmth, and brought outside the young bees which were not required as nurses and were too young for field foragers. All these symptoms giving the appearance of early swarms and raising the hopes of swarm-sellers. I hear of apiaries containing from twenty to forty hives having had only a small number of swarms, which means a poor harvest for the skeppists who rely on swarms for profit. Besides, the few stocks from which swarms issued have not sent out casts, so that their increase has also been very limited. In my own apiaries the few skeps kept for this purpose have not only swarmed but, in most cases, sent out casts also. We had, however, been feeding up to May 27. Experience is thus again in favour of feeding where required, especially in cold, unsettled weather.

Current Prices of Honey.—This matter, I suppose, will be allowed to drift on, each one being a market unto himself. It seems to me that our trade journal should make some effort —located, as it is, in the emporium of the world—to point out the way for some one to publish general *price current*, if not take the lead in the matter. Perhaps no one has counted the cost that the difference of 1d. or 2d. in the pound of honey will make to bee-keeping when viewed in the aggregate. Who will step out boldly and state a fair market price for honey in bulk or in bottle and sections? Some of our appliance dealers advertise that they are importing sections by "millions!" others by the "car-load!" and this leads one to suppose that a very large quantity of honey is produced in sections every year. Now, if some three millions of these sections are filled, and many sold at a low price, consider the loss to the producers! Why, a penny per section reduction in three millions would mean £6,250 loss to bee-keepers.

The late rains will give us a good breadth of bee-forage if we get a spell of warm weather such as has been prophesied for this month. There are the limes and the white clover to

look forward to, besides vetches, on which latter the bees generally finish up the season in this district. In a letter I received the other day from a prominent bee-keeper in Wales, mention was made of the fact that with a wide breadth of heather about a mile and a half from his apiary, he had proved that, given good weather, the distance his bees had to fly made very little difference in the quantity of honey stored compared with hives taken close to the heather. This I am able to corroborate myself with regard to the lime-honey harvest. The bees at our out-apiary have to travel two miles to the lime trees either in Langley Park or those at the Priory, Peasemore. On the other hand, the bees at our home-apiary are within a stone's throw of some of the trees, and only about a quarter of a mile of the trees in the park; yet I find, year after year, the bees at the out-apiary get their full share of the lime honey.

No doubt good returns are often secured by moving bees to heather and other sources of forage situated more than two miles from the apiary, but there is always the expense and risk of breakdown in moving hives to and fro, together with rent and cost of journeys to see if everything is going on well. All this tends to make it suitable only for those who devote their whole time to bee-keeping to adopt these migratory methods of extending the duration of the honey harvest and increasing the yield; at least, so it seems to me.

Shade for Hives.—This question has been discussed, again and again, both here and in America, where various means of affording shade to hives are adopted. The smaller apiaries of British bee-keepers are much in the same condition; in fact, many of my hives are exposed to direct sunshine all day long, while others only get a glimpse of it through the trees; not a few are entirely shaded after 10 a.m., and others after 1 p.m. But, so far as results, my best return this season so far is from a completely shaded hive. As a matter of fact, I have five side by side in the shade *all day*, and they are doing equally well with those exposed to sunshine the whole time. It thus appears that—saving the one hive mentioned first—I cannot say that my shaded hives are any better than those standing in the sun. I know we are apt to judge of bees by our own feelings.—W. Woodley, *Beedon, Newbury.*

[So far as the B.B.J. "pointing out the way" to establish and publish a uniform rate of prices for British honey, it has hitherto taken up not a little of our time and space in pointing out the impossibility of formulating a workable scheme possessing the slightest chance of securing a satisfactory result. No doubt Mr. Woodley has an ideal price, which he considers fair to all concerned, along with others equally well-meaning with himself, but differing widely as to what this price shall be, so that it becomes a question of opinion only; and the calculation given above regarding millions of sections, obviously leads one to suppose that any lowering of present prices would find no favour with our correspondent. This being so, we are ourselves confronted with the recently expressed opinion that present prices for British honey are absurdly high, and that it will pay to produce it for wholesaling at threepence to fourpence per pound. In view of this divergence we may well be excused for declining to undertake the thankless and probably fruitless task of adjudicating between such extremes.

On the other hand, if Mr. Woodley and a few other leading honey producers can arrange a meeting between themselves to discuss the matter, we will gladly give space in our pages for making their views public. Can we say more?—Eds.]

(*Correspondence continued on page* 264.)

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

The picture on opposite page will, no doubt, arouse more than ordinary interest from the fact of its bringing readers (who have heard much of Mr. Wells and his hives for some years past) into almost visible touch with the neat and well-ordered little apiary and its owner. Having—along with our esteemed senior Editor, Mr. Cowan—spent an enjoyable day with Mr. Wells a few years ago, before the "system" had been quite so much talked about, and, without let or hindrance, personally opened and inspected the hives seen, we can testify to the "good bee-keeping" evidenced in every hive in the apiary. Without any pretension so far as acquaintance with the highly-cultured or scientific side of the craft, Mr. Wells knows what to do and how to do it; and his bees are, apparently, kept as orderly in their behaviour as is everything else we saw. When, therefore, one sees that only the wooden railing seen behind the hives divides the apiary from neighbours who are not themselves bee-keepers, without annoyance or damage done, it proves more plainly than words how much depends on the management of the bee-keeper so far as making the pursuit possible when in such close touch with what may be nervous neighbours.

We dwell on this aspect of the bee-garden seen because of it being a case in point when considering the question of keeping bees under conditions that some would deem impossible without great damage to neighbours.

For the rest, we may say the garden is a model of perfection, excellently arranged, and we doubt if there be another plot of ground in the kingdom which, in proportion to its size, yields so profitably in honey, fruit, flowers, and vegetables.

Along with the photo of the original home of the "Wells' hive" we were favoured with the following particulars regarding it:—

"The hives stand on a slab of concrete about 5 ft. wide, half of that space to the front being covered with cocoanut matting,

which makes a good floor for tired bees to alight upon.

It will be observed that all are double-hives, adapted for working bees on what is now generally known as the "Wells System." In the end of each leg on which the hives stand is fixed a stump of iron, to prevent rotting and also to stop insects from finding their way into the hives. The photo was taken in May last, and shows the hives as they will stand until the end of the present season. Only seven of the hives seen are occupied, viz., those having a board reaching from the ground to the flight-board. The miniature hive on the extreme right contains a couple of nucleus colonies, with two combs in each, ready for sending away to a customer. It will be seen that the unoccupied hives have their floor-boards lowered, with the front blocks removed, in readiness for a nucleus colony in each compartment when the hives are divided after swarming. They will then be allowed to build themselves up into stocks for wintering and for next year's work. The nearest large hive on the right is somewhat different in construction to the rest, inasmuch as each compartment of the brood-nest takes ten frames, while the others only hold seven in each of the two compartments. It also has a space under each brood-nest made to take a box holding eleven shallow-frames; this box giving the bees room below in case of over-crowding above, and thus tending to prevent swarming. I purpose making the same addition to all the other hives when I have time. It will be noticed that the flight-board and porch to each right-hand compartment is painted black, while those to the left are white, the different colours assisting young queens in recognising their own home. By these simple means I rarely have a young queen mistaking her hive when returning from her mating trip. No doubt some will consider that the space between each hive (about 1 ft.) looks close, but I find no trouble arise from that. The three plum trees—with whitewashed stems—standing about 2 ft. away from the front of the hives, afford excellent shade for the hives from the hot sun, and supply me with abundance of fruit from year to year. A large bed of crocus, about 12 ft. wide, extends from end to end of the ground in front of the hives, but the photograph only shows their long grassy tops. In spring, however, the ground is covered with many thousands of blooms, giving the bees abundance of pollen and some honey just at the right time. The partition fence at the back of the hives and about the same height, between the hives and which I am seen standing, divides my garden from my neighbour's. I may say the photo sent is my own taking, one of my daughters mounting the ladder in an adjoining field and removing the "cap" of camera, placed 11 ft. high, when I gave the word.

I think that what I have said is sufficient to make the hives in my apiary understood, so far as needful, by any one interested in it."

MR GEO. WELLS'S APIARY, ECCLES, NEAR AYLESFORD, KENT.

CORRESPONDENCE.

(*Continued from page* 262.)

INSECTS AND FLOWERS.

COLOUR AS AN ENTICEMENT.

[3729] While reading with pleasure a large portion of Mr. Hamlyn-Harris's article under the above heading in your issue for June 8, I feel that there are many remarks which demand criticism, inasmuch as they are unscientific. I presume Mr. Harris means by the term "bees" the honey-bee? If so, I cannot speak, as a bee-keeper of *long* experience, but having watched from earliest boyhood the ways of insects, flowers, and all the host of living things which brighten and lend their charms to this beautiful earth, I am able at least, to call to mind a few facts relating thereto.

One point which Mr. Harris would impress upon his readers is misleading if not unfair. He gives us to understand that the subject of insect and the colours of flowers is one "yet unexplored to any great extent." We certainly do not know "all about it," but we do know a good deal, and it would not be difficult to name a dozen different works on the subject. Mr. Harris—a member of more than one scientific society—would probably remember the name of the great Charles Darwin, who studied this very question nearly all his life, and gave us more than one book dealing with it. A. R. Wallace and Bates, Grant Allen, and Sir John Lubbock, and a dozen more have written thousands of pages of interesting and masterly information on the relation of the colours of flowers to insects. I may also be excused for saying that Mr. Harris is, to my mind, unobservant for a bee-keeper. For instance, instead of bees not caring for yellow flowers I have found them just the reverse. Think of the palm-willow, crocus, limnanthes, Douglasi, dandylyon, and the fields of golden gorse! Again, is it quite correct to state that green flowers are "treated with extreme indifference" by bees? For example, take the sycamore, limes, maple, and daphnes, which have a yellow-green blossom. These, particularly the first two, are much visited by bees, and we love to hear and see them busily humming in-and-out of the cool green foliage, and clinging to the pendant blossoms in the early days of summer. With regard to scarlet conservatory flowers I have had no experience, but I know that bees are particularly fond of the scarlet tropæolum.

It is not at all rare for hive-bees to visit red clover. Darwin says :—"The difference in the length of the corolla in the two kinds of clover (trifolium pratense and incarnatum) must be very trifling; for I have been assured that when red clover has been mown, the flowers of the second crop are somewhat smaller, and that these are visited by many hive-bees."

Space will not permit me to go into the question of the effect of the colours of flowers on the eyes of insects, but Mr. Harris and others wishing to read-up this interesting study should obtain Sir J. Lubbock's works on the subject; the "Colours of Flowers," by Grant Allen; and, best of all, the works of our greatest observer and naturalist, Darwin.

There can hardly be any doubt that the colours of flowers have been evolved into their present conspicuous state so that they may be easily recognised by insects, and it may also be taken as a general rule that inconspicuous flowers, such as those on grasses, oaks, and fir trees are fertilised by the wind. The sycamores, &c., already mentioned, may be cited as an exception, but the unusual amount of honey they yield is easily scented by the bees, and so they do not require gaily coloured petals as "sign boards" to advertise their wares and secure fertilisation.

Let us by all means study nature, and if "bee-keeping" does nothing else but instil into the minds of those connected with it a love for the beautiful things of the earth it is doing a good work. If it teaches us to enjoy the kindly sensation which beams down upon the temple of nature and to admire the lowliest buttercup by the roadside, and impresses upon us the fact that this common flower is more beautiful and infinitely more wonderful than all the golden glory of Solomon, it will have done more for the happiness and welfare of humanity than all the sermons ever preached in temples made with hands. And, lastly, by their untiring energy, the bees will daily remind us of the noble words of the great Carlyle when he says :

"Behold! has been dawning another blue day,
Oh! say, wilt thou let it slip heedless away?
Out of eternity this new day is born,
Into eternity at night 'twill return."

Conway. A. T. JOHNSON.

VALUE OF SWARMS.

[3730.] The following may possess some interest for readers :—My young daughter, who is very fond of visiting my people, said to me at luncheon to-day :—

"Father, tell me, why are our people so pleased when they get a swarm of bees? Why are they more valuable to them when they are *out* of the hive than when they are *in* it?"

I need scarcely say that this query necessitated a considerable explanation on my part, but I thought the remark very good.—A SUFFOLK RECTOR.

SOLAR WAX-EXTRACTORS.

[3731.] A very simple and quite efficient solar wax-extractor can be made in this way :—On a stout piece of board lay a piece of felt or something of the kind. Upon this set a round shallow tin, such as a 7 lb. lard tin. Over this put a wire basket, just a little smaller than the tin, kept from falling into the tin by two skewers or slips of wood laid crosswise. Inside the wire basket let there be a

piece of straining-cloth. On this pile up your old comb or odds and ends of wax. Over all set a bell-glass, and let the spot chosen be a sunny one from morning till night.

The bell-glass gets the sun's rays in full, whatever the position of the sun, without any turning about of the extractor. The use of felt is that the bell-glass may fit tightly down by its own weight, and allow no heat to escape. The board must be stout so that it may not warp. You can make the wire basket by getting a sufficiently large piece of fine wire-netting, and moulding it with your hands over the shallow tin, turned upside down.—SIDNEY SMITH, *Wheldrake Rectory, York, June* 24.

WEATHER REPORT.

WESTBOURNE, SUSSEX.
JUNE, 1899.

Rainfall, 1·07 in.
Heaviest fall, ·48 in., on 30th.
Rain fell on 5 days.
Below aver., ·79 in.
Maximum Temperature, 78°, on 7th.
Minimum Temperature, 41°, on 11th.
Minimum on Grass, 34°, on 14th.
Frosty Nights, 0.
Sunshine, 309·6 hrs.
Brightest day, 15th, 15·3 hours.

Sunless Days, 0.
Above average, 90 hours.
Mean Maximum, 73·7°.
Mean Minimum 49°.
Mean Temperature, 61·3°.
Above average, 4 2°.
Maximum Barometer, 30·56°, on 8th.
Minimum Barometer 29·40°, on 20th.

Very poor prospect for honey in this district; so far, only the strongest hives have any surplus. L. B. BIRKETT.

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING JULY 1, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
June 25....	30·10	59·0	67	48	19	56·8	—
,, 26....	30·16	67·0	77	57	20	66·3	—
,, 27....	30·31	63·5	75	56	19	64·8	—
,, 28....	30·10	60·0	70	50	20	59·3	·18
,, 29....	29·80	62·0	71	53	18	61·3	—
,, 30....	29·93	60·5	70	47	23	57·7	·19
July 1....	29·51	62 0	67	52	15	59·0	·41
Means	29 99	62·0	71·0	51·9	19 1	60·8	·78*

* Total, ·78 in.

Mean vapour tension, 0·387 in.; mean relative humidity, 69 per cent.; mean temp. of the dew point, 51°·6. The rainfall, viz., ·78 in., =17,645·94 gallons, or 78·78 tons to the acre, or 3·90 lb. to the square foot. For the week ending June 24, the mean temp., viz., 60°·0, was +1°·6, and the rainfall, viz., ·80 in., +·40 in. The mean temp., May 28 to June 24, viz., 57°·2, is +0°·7, and the rainfall, viz., ·80 in., −1·10. The rainfall, January 1 to June 24, viz., 9·63 in., is −·89 in.

FRED. COVENTRY.

Duddington, Stamford, July 3.

Queries and Replies.

[2230.] *Suspected Disease in Hives.*—Can you tell me what is going (or has gone) wrong with some of my hives? Last year on examining three of them I found here and there young larvæ in a decaying condition. They had never been capped. They seemed to progress from the egg stage for two or three days and then commence to decay; yet the hives kept fairly strong. This year on examining I find the same thing is again occurring. The few affected cells are lying outside, as it were, of patches of brood. The bees, however, seem bright and lively enough, and are carrying well. Can you suggest a remedy?—J. H, *Westoe, South Shields.*

REPLY.—The fact of a few larvæ scattered here and there dying, as stated, can only be satisfactorily explained after a microscopic examination of the dead brood. It is hardly possible that the hive is affected with foul brood, so long as the mischief is of such limited extent, and does not seem to increase. Therefore, as already said, we will require a small sample of comb sent with dead larvæ in the cells before a reply of much value can be given.

[2231.] *Dealing with Foul Brood—A Swarm Destroyed.*—In the early part of May my No. 3 hive showed signs of foul brood on five of the frames. These I removed and burnt, replacing them with new frames fitted with full sheets of foundation. On the 4th inst. the stock swarmed, and the swarm was hived into a skep. I then removed the parent hive from its stand and put the skep containing the swarm in its place. I next proceeded to clear out the parent hive, brushing off the bees from the frames, &c., they (the bees) quickly flying to the old stand and joining the swarm. This done, all the frames, quilts, &c., were burnt, and the hive has since been cleaned and painted one coat (another to come). In the evening, when the bees were all inside and quiet, I tied a piece of cheese-cloth over the 3 in. hole in top of skep, and fixed pieces of perforated zinc around the bottom, the skep being raised about an inch (on one side) from the board, thereby making prisoners of the inmates for the regulation forty-eight hours (see "Guide Book," page 148). During the two days (which have been hot) I covered the skep with bags. On the evening of the 6th—forty-eight hours having expired—all being ready (promising myself a lively time), set to work to transfer, when I discovered my skep contained about a score or so of *live bees, all the rest being dead!* I committed the whole to the flames. What did I do that I should have left undone, or what did I leave undone that should have been done?—W. C. H., *Newton Abbot.*

REPLY.—Several considerations arise in connection with the course of procedure followed

by our correspondent. Foremost among these is the primary question as to the stock being really diseased; and in this connection we can hardly reconcile the fact of the bees doing so well (after having five frames of brood supposed to be diseased) as to build out five frames of foundation, fill the hive with bees, and send off a natural swarm in about three weeks! This does not (*primâ facie*) look like the work of a diseased stock, and we much regret not having had a sample of the suspected comb to guide us in replying. For the rest, we may say the instructions in the "Guide Book" (p. 148) never contemplated dealing with a natural (perhaps healthy) swarm in June supplemented by the whole of the bees of the parent stock. It deals with a diseased lot, which, when shaken from their combs, we should not expect to half fill the skep into which the bees are temporarily hived. In the case in question we can only imagine that the swarm has been smothered by covering the skep with bags in the hot weather which followed. If the five new combs of brood are not burnt we should much like to examine a small piece to satisfy ourselves whether they are diseased or not.

[2232.] *Controlling Increase.*—Though a bee-keeper for ten years, you must pardon my ignorance in asking for information as follows:—I am compelled to be away from home three or four days every week, and am rather at a loss what to do in the way of preventing increase. I have one of the best places in England for an apiary so far as heather honey, there being two miles of heather bloom both north and south of my home. My apiary consists of twenty-two frame hives and twenty-eight flat-topped skeps, nearly all of which I super with racks of 1-lb. sections, and these I sell. What I want to know is:—How can I reduce the numbers of my hives? Each year swarms will come (and go also), and although my man generally puts two and three swarms together and unites others to hives that have already swarmed (I am not here when they swarm), still my stocks increase in numbers. Can I drive the bees of all the skeps and unite them to those in the frame hives at once, so as to be in time for the heather harvest? This uniting, I suppose, should, in any case, be done every autumn.—R. W. Heathcote (Major), *Ringwood, Hants.*

Reply.—The keeping of so many as twenty-eight stocks in skeps will always tend to a large increase, unless swarms are sold. It would, however, entail so large a sacrifice of brood to drive the bees and unite as stated above, that we do not advise that course except in cases where the skeps have already swarmed this season and are now nearly broodless in consequence. An apiary worked for sections of heather honey and not for swarms should consist wholly of frame hives, to be under proper control as to increase. We should do no more uniting at this season than joining up any weak lots to make them strong enough for section work on the heather, and largely reduce the number of skeps at close of season by selling as they stand.

Bee Shows to Come.

July 13 and 14 at Louth.—Honey, Hives, and Bee Appliances in connection with the Lincolnshire Agricultural Society. Bee Department under the management of the Lincolnshire B.K.A.

July 22, in the Home Park, Windsor.—Show of Honey and Bee Appliances, Berks B.K.A. (Windsor District), in conjunction with the Prince Consort's Association. Open Classes for Hives and Appliances, also Open Classes for Three Sections and Three 1-lb. Jars (free entry). Exhibits to be sold for the benefit of H.R.H. Princess Christian's Nursing Fund. Schedules from Mr. W. S. Darby, Hon. Sec., Consort Villas, Clewer, Berks. **Entries close July 10.**

July 19, 20, and 21 at Hull.—Bee and Honey Show in connection with the Yorks Agricultural Society.

July 19 at Pembury, Tunbridge Wells.—Honey Show in connection with the Gardeners' Flower Show. **Open class** for this season's honey. Schedules from W. Kemp, 2, Hill View, Pembury, Tunbridge Wells. **Entries close July 8.**

July 21 and 22, at Knowle.—The annual exhibition of the Bristol, Somersetshire, and South Gloucestershire B.K.A. will be held in connection with the local Horticultural Society's show. Schedules from Miss H. Dawe, Long Ashton, near Bristol. **Entries close July 15.**

July 26 and 27 at Wolverhampton.—Annual Bee and Honey Show of the Staffs. B.K.A. in connection with the Staffordshire Agricultural Society's Show. Open classes for Sections, Extracted Honey, and Bee Appliances. **Entries closed.**

July 27 at Cambridge.—Honey Show in connection with the Cambs. and Isle of Ely Agricultural Society. Open class for single 1-lb. jar of honey. Schedules from C. N. White, St. Neots.

August 2 at Henbury, near Bristol.—The Henbury District B.K.A. show of honey, &c., in connection with the Horticultural Society's show. Open classes for six 1-lb. sections and six 1-lb. jars, extracted honey. Schedules from C. A. Newman, hon. sec., Henbury, near Bristol. **Entries close July 25.**

August 2. In Neston Park, Neston, Wilts.—Honey Show in connection with the Atworth and District Horticultural Show. Seventeen Classes for Honey and Bees, including Single 1 lb. Jar and Single 1 lb. Section, with no Entry Fee. Schedules from J. P. Inkpen, Neston, Corsham. **Entries close July 26.**

August 3 at Loughton, Essex.—Honey Show in connection with the Loughton Horticultural Society Annual Exhibition. Four classes for honey open to County of Essex. Entry fee, 6d. Schedules from C. E. Skinner, Hon. Secretary, Loughton. **Entries close July 29.**

August 3, 4, 5, and 7, at Liverpool.—Bee and Honey Show in connection with the Royal Lancashire Agricultural Society. Special Classes and Liberal Prizes for Honey, &c. Lectures in Bee Tent. Schedules from 34, Castle-street, Liverpool. Jas. Birch, Secretary. **Entries finally close July 8.**

August 5 at Helsby, Cheshire (in connection with the annual flower show.) Open classes for extracted honey and bees-wax. Schedules from Dr. Briant, secretary, Helsby, Warrington. **Entries close July 31.**

August 7 at Beddington Park, near Croydon.—Surrey B.K.A. Annual Show, in connection with the Beddington, Carshalton, and Wallington Horticultural Society. Increased prizes. Five Open Classes, including single 1-lb. jar and section, with free entry. Schedules from F. B. White, Hon Sec., Marden House, Redhill. **Entries close July 30.**

August 7, at Melton Constable Park.—Annual Honey Show of the North Norfolk B.K.A. Three open classes, including one for single 1-lb. jar of

honey. Schedules from Hon. Sec., C. J. Cooke, Edgefield, Melton Constable. **Entries close July 28.**

August 7 and 8, at Delapre Park, Northants.—Northants B.K.A. Honey Show in connection with the Horticultural Exhibition. Three open classes with special prizes, including one for single 1-lb. jar of honey (entry free), six prizes, first prize, 20s. Schedules from Robt. Hefford, Hon. Sec., Kingsthorpe, Northants. **Entries close August 1.**

August 9, at Marlow, Bucks.—Annual Show in connection with the Marlow Horticultural Society, under the auspices of the Berks B.K.A Bees, Hives, and Appliances, Honey, &c. Eleven Open Classes. Liberal Prizes.—For schedules, apply to A. D. Cripps, Hon. Sec., High-street, Marlow. **Entries close August 5.**

August 16 and 17 in St. John's School-room, Blackpool.—Annual Show of the Blackpool and Fylde Horticultural Society. Exhibition of honey under the auspices of the Lancs B.K.A. Open classes for twelve 1-lb. sections and twelve 1-lb. jars extracted honey, with prizes of 20s., 10s., and 5s. for each. Schedules from R. Atken, Sec., 17, Devonshire-road, Blackpool. **Entries close August 7.**

August 25 and 26, at Dunfermline, N.B.—Bee and Honey Show, West of Fife and District B.K.A., in connection with the Horticultural Society. Schedules from Geo. Weston, Sec., Grant's Bank, Dunfermline. **Entries close August 22.**

August 29 at Northwich.—Cheshire B.K.A. Show, in connection with the Cheshire Agricultural Society. Open classes for honey, wax, and single hives. Schedules from Mr. T. A. Beckett, St. Werburgh's Chambers, Chester. **Entries close August 8; at double fees August 15.**

August 30 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 23.**

September 13 and 14 at Derby.—Eighteenth annual show of the D.B.K.A., in connection with that of the Derbyshire Agricultural Society. Eight open classes, including two with free entry for 1-lb section and 1-lb. jar of honey. Schedules from F. Walker, hon. sec. D.B.K.A., 64, Gerard-street, Derby. **Entries close August 31.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Swarm Received on Frames.—Referring to our reply (on page 257, last week) to R. Higginson, Manor Lodge, Liverpool-road, Birkdale, Mr. A. Jones, local hon. sec. of the Lancashire B.K.A. (Southport District), writes:—"I see that a correspondent writing from Southport, has asked for information about hiving swarms. If he should not be able to put into practice the advice you have given, I willingly offer to do anything by way of helping him and the bees."

R. Andrews (Broadway, Worc.).—*Dilatory Dealers.*—The firm you name are perfectly reliable. You should inform them that the hive has not reached your station ten days after they advised you of its dispatch.

F. H. Dunstan (Rotheram).—*Leaf-cutter Bee.*—1. The cells formed of leaves sent are those of one variety of the genus *Megacile* or leaf-cutter bee. They are pretty common in some London gardens, and very interesting to watch cutting the circular pieces from the green leaves, generally of rose trees, from which, with wonderful ingenuity, they form the cells sent. 2. The mischief you complain of will disappear in warm settled weather.

W. Hulance (Glos.).—Your letter got astray by accident, and "Echo" in consequence is out of date, but we hope to hear from you again regarding your "experiences."

A Learner (Newent).—*Bees getting behind Dummy.*—We do not know what "book of bee-keeping" you refer to, but care should always be taken to see that swarms are working correctly in the frames after hiving when you do not fully understand the hive in which they are put. Leave them alone till end of season, and then cut out any combs they may have built behind the dummy.

J. P. (Trefnant).—*Bees and Horses.*—If the ground purchased with the intention of starting an apiary on it is only divided by a hedge from land cultivated by your neighbour, we fear you will be held answerable at law for any damage done to horses when ploughing. The arrangement you suggest for paying the farmer a small sum to do the needful work close to the hives after sundown will, no doubt, be the best that can be made, and would be helpful to both sides, if accepted.

A. J. B. (Helsby).—*Selling Diseased Bees.*—We shall be glad to have the expert's report, as promised. Meantime, we regret to say, the B.B.K.A. hardly receives sufficient financial support from bee-keepers generally to allow of its involving itself in costly litigation. The simplest way is to sue in the County Court for recovery of value. If you will send name of seller (in confidence), we will look into the matter, so far as his advertising in our pages.

E. C. R. W. (Romsey).—*Queen Killed after Swarming.*—The dead queen sent bears every appearance of a virgin. The insect is too dry for *post mortem* examination, but we have little doubt that there has been no fertilisation. This, and the facts stated, points to the swarm having issued nine or ten days ago, and the subsequent return of bees after conclusion that the swarm issued unseen nine or ten days previous to the date noted, and the old queen, being lost, the bees returned only to reissue after the usual interval, headed by a young queen.

R. Baldwin (Ipswich).—*Honey from Infected Hives.*—If the honey is in good condition and of good quality it is quite suitable for home use.

H. G. (Wickham Market).—*Transferring from Skeps to Frame-Hives.*—If on examination the skep is found to contain no brood, and the queen has established herself in a new brood-chamber below, the skep can be removed at any time to allow of supering. All the flying bees will return to the old stand if shaken out on a fine day.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

WANTED, 50 good SECTIONS, also Extracted Honey. T. LEE, Bunkers Hill, Macclesfield. 283

FIRST-CLASS SECTIONS, 7s. 6d. doz.; Extracted Honey, 60s. cwt. COCKS, Haddenham, Bucks. 290

30 DOZEN good SECTIONS, 8s. per doz., carriage forward. JOYCE, Chapel-place, Wherwell. 281

FOR SALE, 700 lb. of pure English '99 HONEY, very light colour, 6½d. lb.; sample, 2d. Cash or deposit. ALBERT COE, Ridgwell, Halstead, Essex. 292

FOR SALE, Cowan's 50s. 2-bar Honey Extractor, equal to new; also Ripener, 15s. C. MOODY, The Apiary, Alton, Hants. 289

HONEY WANTED. Exchange foundation, sections, &c. List sent. 2, Cameron-road, Christchurch, Hants. 282

FOR SALE (cheap), a Mahogany Observatory HIVE, takes two standard frames; very neat; almost new. DALE, Colwich, Stafford. 287

HONEY (granulated) in ½-lb. tie-over glasses of good quality, slightly dark, at 4s. per doz. glasses on rail. WILLMOT, Exmouth. 284

PROLIFIC QUEENS. Nuclei and Swarms. Stocks—Skeps or Frame Hives. E. WOODHAM, Clavering, Newport, Essex. 286

TRAVELLER, among best grocers, will SELL HONEY on Commission. BEES, care of Melton House, Knowle, Bristol. 285

FOR SALE, Barnes's 10-guinea Combined Circular Saw, Fret Saw, and Boring Attachment (nearly new), £9 10s. Satisfactory reason for selling. Apply, A. T. PROCTOR, Wigston Magna, Leicester. 292

PROLIFIC FERTILE QUEENS, 4s. 6d. each; with Frame of Brood and Bees, 6s. 6d. Guaranteed healthy. Strong Sprouting Broccoli Plants, 1s. hundred. WOODS, Normandy, Guildford. 293

QUEENS, raised on scientific principles and under best conditions. Prices: Virgins, 2s.; Fertile, July, 4s. Booked in July for delivery end August and September, 3s. 6d.; otherwise 3s. 9d. Reduction for quantity. Satisfaction and safe arrival guaranteed. Cash with order. TAYLOR, Grasmere, Ilminster. 291

WANTED, an EXTRACTOR and HONEY-RIPENER in Exchange for the Works of Josephus, 1755. The History of the Church, 1683, in very good condition. More particulars. MORGAN, Myrtle Villa, Cowbridge. 269

SECTIONS, 7s. dozen. Light colour. Very good. LING, Shady Camp, Linton, Cambs. 274

FOR SALE, healthy STOCKS of BEES. PAVY, 3, Lower East Hayes, Bath. 270

SELECTED FERTILE ENGLISH QUEENS, 5s. 6d. each, post free, in travelling cage. JEMEISON & BAKER, Bee Specialists, Dringhouses, York. 273

ENGLISH MADE HONEY JARS (1-lb. screw-cap). 14s. per gross; sample, 6d. JAS. DYSON, Stainforth, Doncaster. F.N.

QUEENS, STOCKS, NUCLEI, and SWARMS. A few more orders can be accepted. List free. Rev. C. BRERETON, Pulborough, Sussex.

IMPORTED CYPRIAN QUEEN FOR SALE through order being cancelled, 7s. 6d. HOWES, Melton House, Knowle, Bristol.

COMFORTABLE APARTMENTS for Brother Bee-keepers visiting Douglas. HORSLEY, Merridale House, Empire-terrace, Top of Castle Drive, Isle of Man. 183

FURTHER REDUCTIONS. TRANSPARENT CELLULOID QUILTS, post free, 1s. 6d.; CELLULOID QUEEN EXCLUDERS, post free, 1s. 6d. R. H. COLTMAN, Bee-Appliance Maker, Burton-on-Trent.

BRICE'S RELIABLE QUEENS. Well-known strain, one quality, one price. Mated tested Queen, 5s. 6d. Post free in perfected travelling and introducing cage. Safe arrival guaranteed. HENRY W. BRICE, 100, Brigstock-road, Thornton Heath.

2/2.—BEE GLOVES, as recommended by the great bee authority the Rev. W. E. Burkitt, 2s. 2d. per pair, post paid. Special terms for wholesale buyers. Manufactured by EDWARD REYNOLDS, Glove and Gaiter Manufacturer, Andover. 257

Prepaid Advertisements (*Continued*).

FOR SALE, 2 Stocks pure LIGURIAN BEES, 1898 queens, in Lee's hives, 30s. each. Swarms, when ready, 10s. 6d., 12s. 6d., 15s. Also small Apiary of 6 strong stocks and sundries. The lot £5. R. NESS, Expert, Olstead Grange, Ampleforth, York. 240

WANTED, a gross of customers to buy a gross of 4¼ by 4¼ glass for glazing sections, 2s. 6d.; best quality. Bingham smokers, 2s. 6d. All carriage paid; large quantity in stock. Apply, A. T. PROCTOR, Wigston Magna, Leicester. 293

FINEST BEESWAX FOUNDATION, 1s. 9d. lb. brood. Special parcel: Six sheets Foundation and Queen Excluder, 2s. 6d., post paid. PARKES, Bee Expert, Oldbury. 288

PURE IMPORTED ITALIAN QUEENS, 5s. each.
" " CARNIOLAN QUEENS, 6s. each.
ENGLISH QUEENS (best quality), 5s. each.
Safe arrival guaranteed in self-introducing Cages.
Cash with order.
HOWES, MELTON HOUSE, KNOWLE, BRISTOL.

THE NEW "W.B.C." UNCAPPING KNIFE,
may be had retail from all dealers in Bee Appliances, and wholesale from
S. BLOMFIELD & CO.,
MANUFACTURING CUTLERS,
33, CHARLES STREET, HATTON GARDEN, LONDON.

PATRON:
Her Majesty the Queen.
PRESIDENT:
The Earl of Derby, K.G., G.C.B.

GREAT SHOW
AT
LIVERPOOL,
AUGUST 3rd, 4th, 5th, and 7th, 1899
£3,438 in Prizes.
SPECIAL CLASSES FOR HONEY, &c., &c.
Entries finally Close July 8th.
Prize Lists from 34, Castle-street, Liverpool.
JAMES BIRCH, *Secretary.*

LANCASHIRE BEE-KEEPERS' ASSOCIATION.

MEETINGS at PATRICROFT, near MANCHESTER, JULY 15th, at Mr. WILLIS', "THE GRANGE."
Lecture and Demonstration at 3 p.m.
Committee Meeting, 4.30 p.m.
All interested invited.

TO BEE-KEEPERS IN KENT.
BEES and BEE-APPLIANCES
of best quality
SUPPLIED PROMPTLY, CARRIAGE PAID to any Station in Kent, at low prices. Our Price List, free on Application, gives descriptions of **Sladen's Sections** and other Specialities.
F. SLADEN, Ripple Court Apiary, **DOVER.**

BEE -APPLIANCES -HIVES and -KEEPERS' WOOD.
Illustrated Catalogue Free.
E. J. BURTT, Manufacturer, **Gloucester.**

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held on Thursday, July 6, at 105, Jermyn-street, S.W., Mr. E. D. Till occupying the chair. There were also present Miss Gayton, Major Fair, Rev. W. E. Burkitt, Messrs. R. T. Andrews, H. W. Brice, W. Broughton Carr, J. M. Hooker, J. H. New, E. Walker, C. N. White, F. B. White, and the Secretary. Letters apologising for inability to attend were read from Messrs. R. C. Blundell, W. H. Harris, H. Jonas, P. Scattergood, and T. I. Weston.

The following new members were elected, viz.:—Dr. A. G. Gidley, High-street, Cullompton; Mrs. Sidney Meyer, High-road, Whetstone.

Mr. Till presented the report of the Finance Committee, the Statement of Accounts made up to July 4, the credit balance on that date being £50 9s. 4d. A list of payments recommended by the Committee was also brought forward, and the report approved.

The Education Committee, in accordance with the reports of Examiners, approved the granting of Third Class Expert Certificates to:—Mr. D. W. Bishop Ackerman, 72, Wokingham-road, Reading; Mr. J. Herrod, Sutton-on-Trent, Newark; Mr. A. F. Marett, Shrewton, South Wilts.

It was reported that the Committee had made nominations of Judges and Examiners at the following shows, &c.:—July 13, Louth, Lincs.; July 20, Hull, Yorks.; July 20, Horticultural College, Swanley, Kent; July 27, Cambridge; July 27, Wolverhampton, Staffs.; August 4, Liverpool, Lancs.; August 18, Exeter, Devonshire; August 29, Northwich, Cheshire; September 30, Grocery Exhibition, London; October 17, Dairy Show, London.

The nominations were duly confirmed by the Council.

The proposals of the Council to appoint a board of arbitrators to adjust differences between a purchaser and seller of bees said to be diseased not having been acceptable to both parties, the matter, so far as the B.B.K.A. is concerned, is now at an end.

On the motion of Mr. C. N. White, seconded by Mr. F. B. White, it was resolved that as the ballot of members of the Council was in favour of Friday meetings, future meetings of the Council be held on the first Friday in the months of September, November, and December, 1899, and in January and February of 1900. The meeting in October to be on Thursday, the 19th (during the Dairy Show).

The Council then adjourned till September 1.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

SAVE US FROM OUR FRIENDS!

[3732] The question of to what extent foul brood may be spread by experts' visits is dealt with in an able manner by Mr. Brice in the present month's *Record*. It must have been in the minds of most of us from time to time, and Mr. Brice's position in the bee-keeping world, together with his recent admirable articles on the scientific culture of bacillus alvei, combine to render his opinion very interesting. Whether, in spite of modern knowledge and scientific methods, the disease is spreading over the kingdom, or whether—under the brighter light turned on our industry by County Associations—cases which would, till lately, have remained hidden are now discovered, cannot well be determined. But it seems to be spreading, and this gives some advantage to the class of man, always numerous amongst us, who cannot bear being hoisted out of his old groove, when he declines to join his Association or have his hives opened by everybody, expert or otherwise, and acting up to his principles very seldom examines them himself.

Knowing as we do in what myriads the spores of fungoid micro-organisms pervade the atmosphere, it would at first sight seem very injudicious to expose the combs of a colony, not to mention the interior of the hive, by removing the quilts. But when one reflects that, as a first necessity to the existence of the colony, a current of outer air is constantly being drawn in and diffused throughout the hive by the bees themselves, the objection is seen to be devoid of practical value. So that, if our objector has any ground for his attitude, it must be the conveyance of foul brood from hive to hive by the examiner. And on this point I confess that I have not always been free from qualms, and that as a practical bee-keeper, and also as a burnt child who dreads the fire, I do not covet the visit of any outsider, even those of an expert, unless his peculiar methods should be very well known to me. For there are experts and *experts*, and the mere possession of a third-class certificate, honourable distinction as it is, does not, and cannot of itself, ensure wisdom or conscientious carefulness. And if this can be said of an expert, what shall we say of the many kind friends who, neglecting or *never having learned* reasonable precautions, are ready to give a hand and spread disease amongst their neighbours' bees as

cheerfully as they would do, and perhaps have already done, in the case of their own hives. It takes a long time for such folk to grasp the fact that ordinary washing—even if they think of it—cannot be relied upon to destroy a bacillus; and that a garment brought into contact with a foul-broody comb to-day will be just as dangerous a week hence, unless properly disinfected.

The words in italics on p. 269 indicate the reason of my writing as plainly as I can on this matter, which I conceive to be vital to our credit as an associated body, of which, perhaps, the most important objects are to teach scientific bee-keeping and the best methods of combating foul brood. To ensure perfect confidence in our expert visiting, a regular system should be adopted, and I suggest that, at the first convenient opportunity, the Council of the B.B.K.A. should take the matter in hand, and draw up a code of instructions. These should be printed on a card, and delivered to every expert with his third-class certificate, while to reach ordinary bee-keepers a leaflet should be printed similar in form to that on foul brood, which was drawn up, I imagine, by the Council for the use of the Board of Agriculture. These leaflets could be conveniently distributed by the County Associations to their members at the same time as the monthly journals.

The details will need careful consideration. Opinions vary, and I note from Mr. Brice's article that the two leading experts of his Association do not use the same disinfectant. A small thing, no doubt, but suggesting greater differences elsewhere. In hopes that they may be of some help, I will now mention a few points that have occurred to me.

In hive inspection the operator should constantly have it in mind that on no account should any of the combs or contents of the hive touch his person, or be brought nearer to him than is positively necessary. He should cultivate the habit of handling the frames with the ends of his thumb and forefinger, or two fingers at the outside.

Before inspecting an apiary he should make inquiries as to whether any particular hive, or hives, are under suspicion, and should defer dealing with these till the last. If he can gain no information he should begin with the colonies that appear strongest.

On detecting foul brood he should do no more than satisfy himself as to whether the disease is fresh or of long standing, so that he may advise accordingly. It is not the business of a visiting expert to overhaul such hives, nor should he be led into doing so from mistaken motives of kindness. He should on no account proceed to examine other hives in the apiary till the owner has been informed of the existence of foul brood, and of the risk of spreading it. By the owner's desire he can proceed with his inspection after disinfecting himself, as laid down elsewhere in the leaflet.

The expert must be provided with the disinfectants recommended, and must carry with him a smoker and cartridges or other handy fuel. If not in the habit of manipulating bare-armed he should have two pairs of gauntlets, so as to furnish a change when the first pair has been thoroughly sponged. Here I can imagine the objection. "Not so behind the times as all that, when a small square of calico which I can carry comfortably in my coatpocket answers the same purpose!" Quite true. The little square of calico is one of the most convenient articles imaginable, and most useful in manipulating; but it has probably done more to spread disease than any other modern contrivance. Think a minute. These cloths are sprinkled with a solution of carbolic acid, or more effectively with one of carbolic and creosote, and are allowed to become dry or very nearly so before use; the smell being all that is necessary for subduing bees, and a wet cloth having decided inconvenience. Now it must often occur that when the quilts are removed on examining a hive some honey is exposed, not to mention wax or propolis in a sticky condition, and the cloth when dropped on to the frames comes into contact with these which will in some measure adhere to it. The little carbolic left in the cloth will not, in my opinion, devitalise the spores, however soft their condition, nor destroy the bacilli that may be contained in a drop of honey or may be conveyed in any way to the cloth from the diseased hive. The cloth may be rolled up and put away, but the germs will remain, and the next healthy hive over which it may be used will, in all probability, be contaminated, especially if even a minute quantity of honey or propolis be conveyed to the frames or to the bees upon which the cloth now falls. This may well have happened over and over again, and I submit that, however convenient and attractive the use of a carbolised cloth may be, the travelling expert should abandon it in favour of the time-honoured smoker.

Leaving the selection of the best disinfectants and the best method of self purification to be dealt with by others—and it is most important that the instructions on this point should be precise and perfectly clear—I will only suggest that a small bottle of methylated spirits should form part of the equipment. Nothing is more sticky or likely to be communicated by handling these warm propolis, and there is no easier way of removing it than by rubbing hard with a tuft of cotton wool or a bit of rag saturated with spirit. This should be done before using other disinfectants.

I earnestly call the attention of the B.B.K.A. Council to the whole question. It is brought forward with no idea of giving offence to any person; solely in the best interests of bee-keeping. Nevertheless, if any bee-keeper should come to the conclusion that the writer is himself entitled to a foremost place amongst the friends from whom he would pray to be saved, I trust that our editor will give him

every opportunity of saying so. The more discussion the better.—South Devon Enthusiast.

PRODUCING COMB HONEY.

WORKING SECTION BELOW SHALLOW FRAMES.

[3733.] Referring to the recent articles in the B.B.J. and to the extracts from *Gleanings* as to inducing bees to enter racks of sections, and to the recommendations to bee-keepers to super *first* with shallow frames, afterwards raising these and putting sections under, it does not seem to me that this plan will work well in our English apiaries for the following reasons :—

Most of those of our English hives intended to be worked for shallow frames are sent out by the makers with "lifts" having movable dummies or side pieces, by the use of which the "lift" is made to take the shallow frames. Now, in these cases section-racks cannot very well be placed under shallow frames (an extra lift would, of course, be wanted), the racks being smaller each way, and there would thus be a large bee-room from under the shallow frame, outside the section-rack into the lifts; in other words, the bees would get out of the shallow frames into the lifts, and not necessarily work in the section rack at all, but could fill space all round outside the latter and between walls of "lift" with comb. Even if this did not occur, there would still be a great escape of warmth. I hope that I make this clear.

The same objection would apply to shallow frame boxes for use with plain lifts, these being larger than a rack of sections, and it also applies to "Lee's Crystal Palace Supers," the adapter board being much large than a section rack (*en passant*, these supers are certainly a success).

One way of obviating the above difficulty would be, I think, to nail a piece of thin wood, say 1½ in. wide, all round the bottom of the shallow frame box ; but in my humble opinion it could not well be done with lifts with movable dummies or inner walls. Will some member of the craft suggest a better way ?

For myself, I must say that I have never had any difficulty in inducing bees to enter racks. I always put in two or three of last season's combs and use nearly full sheets of foundation. I do not use queen excluders, as I find that bees will not go through these unless absolutely compelled to for want of room, and I have known bees swarm sooner than go through. I call these bee excluders cruel things. I have never had brood in sections. If I did I should congratulate myself on the laying powers of the queen and put on another rack.—E. P. G., *Worthing, July* 1.

[While much obliged to our correspondent for drawing attention to what he calls a "difficulty" in the plan of working racks of sections below shallow-frames, we must remind him that the "plan" detailed was practised in an American apiary, where, with the appliances used, no difficulty would arise. For ourselves, however, we are not aware of its ever having been advised either in "recent articles in B.B.J." or at any time to raise up boxes of shallow-frames and place racks of sections below. We only mention this in order to remove the impression conveyed in first line of the above communication.

Our correspondent is also entirely mistaken in supposing that most "English" hives intended to be worked with shallow-frames are sent out as he describes. On the contrary, our experience leads us to believe that not five per cent. of the hives sent out are made as stated above. Moreover, all our reliable hive makers provide fully against such contingences as are mentioned by our correspondent, so far as section-racks fitting properly above boxes of shallow-frames, otherwise they would fare badly when exhibiting at shows.—Eds]

BEES AND VALERIAN.

[3734.] On p. 386 of the B.B.J. for 1896 (September 24), the question is asked whether bees are partial to valerian, and whether the honey gathered therefrom is of acceptable quality. To these questions I do not remember ever seeing a reply. Many, doubtless, who visited the "Royal" show at Maidstone and travelled by the South-Eastern route, noticed the profusion of pink and red blossom (the two colours seemed quite distinct) adorning portions of the railway cuttings, and it may not be without interest to some readers if particulars of its honey-value, cultivation, &c., could be forthcoming. I notice in the list of flowers sought after by bees, showing their value as honey and pollen producers, prepared by Mr. Cowan, that Greek Valerian (*Polemonium cœruleum*) gets three points in both sections, showing its value for both honey and pollen to be high ; and, although the valerian referred to in the paragraph above quoted is the "red spur" valerian (*Centranthus ruber*), and therefore, probably, a totally different species, it won't be amiss to know if a plant so ornamental—on a railway cutting, at least—is not also of use to the bees. Sutton's "Amateurs' Guide in Horticultural" lists, among flower seeds : Valerian, red garden. Showy border hardy perennial of robust habit ; large red flowers. Height, 2 ft. Another seed list I have contains : Valeriana rubra ; hardy perennial ; height, 3 ft. Are either or both of these the same thing that grows so profusely in Kent ?—Beecroft, *Ashford, Middlesex, July* 8, 1899.

BEE-KEEPING IN IRELAND.

A LADY BEE-KEEPER'S REPORT.

[3735.] As you don't often seem to get any "notes" on bee-keeping from Ireland, I thought a few words on the subject might possess interest for some readers. I have been a

bee-keeper for seven years. I am the only bee-keeper for miles round. I live near the city of Dublin (twenty minutes by train), so it is not a very good place for bees. There are some fields of clover near my garden. I have only two stocks (June swarms of last year). I took off a rack of twenty-one sections of lovely honey from the old stock on June 17 (which rack had only been on the hive for ten days), and two other racks are just ready to come off now, being nearly all sealed. We had a very severe, cold month of May, and I was feeding my bees all through April; but June has been very warm, with no rain. I have, as before stated, only two bar-frame hives of the "Cowan" type. I have had no swarms this year; but my bees seem very strong and healthy, and are very quiet to handle. I never get a sting. I take a great interest in your paper and get a good deal of information from it.—AN IRISHWOMAN BEE-KEEPER, *Fairview, Co. Dublin.*

HONEY-EXTRACTORS AT SHOWS.

[3736.] On reading over the editorial comments of the "Royal," I was somewhat surprised at the allusion made on page 251, which seems to hint at the advisability of leaving out that useful article, the extractor, at the above show, especially as the prize money is, I note, a free gift of our worthy friend, Mr. T. W. Cowan, whose name, I believe, one of the extractors bears. The value of the honey-extractor to bee-keepers is, I am convinced, a great inducement to better methods of bee-keeping, usually followed by the adoption of the frame-hive in the place of skeps, and as a result the production of better quality honey and a more profitable industry to a larger number of bee-keepers. This is, I think, a strong reason why the extractor should receive encouragement from Bee-keepers' Associations, and take its usual place on the show stand.

We hear a good deal about "*Inexpensive appliances*" and "*Price not to exceed*," even in the "Royal" schedule; but one thing is very conspicuous in the extractor class, viz, that preference is usually given to the high-priced extractors — "Excellent articles for large apiaries"—but the general want of bee-keepers is supplied in the less expensive machines. I must be clearly understood to in no way disparage the merits of any extractor, but I am strongly of opinion that if the same thing followed in many of the classes of the "Royal" schedule, some of the appliances would soon drop out of the running, and thus cause more "walk overs" in the future.—T. LOWTH, *Hitchin, July* 6.

TWO QUEENS IN A HIVE.

[3737.] Thinking it may possess some interest for your readers I forward the following particulars regarding a very unusual departure in the bee line, to me at least:—About June 14 last finding one of our stocks of bees with a queen-cell partly built out, I examined the hive again on 27th of same month, and to my great surprise found two queens in the hive, viz., the old queen and what must have been a young one just hatched out, for she had quite a white downy appearance and the cap was still hanging on the empty queen-cell. Is not this very unusual to find two queens together in the same hive? Why did not the old queen lead off the forthcoming swarm indicated by queen-cell found in mid-June. Both queens were on the same frame, so I carefully lifted the old queen by the wings and placed her on another frame of bees; she seemed active and to all appearance well, for she ran over my hands fast enough.

I suppose she would have killed the young queen if the opportunity had been offered. However, I then divided the frames between the old and young queens in separate hives, and placing them alongside each other seeing that there was honey and brood in both portions. The strange part to me is, why the parent queen did not lead off a swarm as the books say they usually do when the queen-cell is being sealed over.—B., *Bexhill-on-Sea.*

[The anomaly noted is, no doubt, a case of bees superseding the old queen, and the latter would disappear when the young queen was mated and laying.—EDS.]

PACKING BEES FOR TRAVELLING.

LOSS OF BEES IN TRANSIT.

[3738.] The seller of the bees, one stock of which lost one quart in transit, has taken no notice of two letters, although I sent the dead bees.

As he had a number for sale, and he said he had had inquiries through his advertisement in your pages from all over the country, possibly others have suffered much worse; if so, perhaps other purchasers will communicate with the Editor.

I once had a lot of driven bees suffocated in a skep through being confined too long with covered thick sacking.

The stocks were delivered by railway company the proper side up.—ALPHA, *Hull.*

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Mr. Head, whose apiary appears on opposite page, belongs to what we may call the active school of bee-keepers, those whose interest in the craft extends beyond the range of their own hives and surroundings. We need men who are willing to convey to others their experiences in the craft, whether for good or for evil, as is done in the following lines written at our request to go along with the picture in print. Mr. Head writes:—

"I commenced keeping bees in 1893, but, unfortunately, instead of starting aright, I

made the mistake of buying (from a friend) hives which were not made to take the standard frame, and I had to get others to replace them. Added to this, I have since had reason to suspect that the hives were not perfectly healthy, though of this I am not sure. Anyhow, by the end of 1894 foul brood was clearly in evidence in my apiary. I could not be much surprised at this, for the disease had been in our neighbourhood and hives were left untouched in gardens around, in which the bees had died. When I had learnt the nature of foul brood I made it my business to stir up the folks in this neighbourhood, and very soon all those hives were cleansed and removed.

"In the meantime we had tasted of the pleasures of bee-keeping, quite a flutter of excitement being caused when I brought into the house my first sample of beautiful honey. Thereafter my interest deepened, I read the works of Cowan, Cheshire, and others, and acquired from them a deal of technical knowledge; but still had difficulty, through the want of an expert to instruct me, in the practical working of the hives.

"During 1895 and 1896 my treatment of the bees seemed again and again to get over the disease, but it usually reappeared after a time; still we managed to keep it under. During 1895 I had several swarms and secured a little honey. In 1896, however, I hadn't a single swarm and hardly a taste of honey. Worse still, by April, 1897, foul brood had got the upper hand to such a degree that I destroyed all the bees left, with everything belonging to them except the hives.

"After such an experience many would have given up heart, but I went to work again, had the hives well boiled and cleaned out with very hot water (made strong with common washing-soda), and then set to work to restock them. I got two swarms down from a well-known dealer in the south, then bought two others at home; later on in September I had the chance to drive six stocks, the bees of which I put in four hives, fed them up well, and as a result, by the spring of last year ('98) I had eight strong healthy stocks without a sign of disease about them; 1898 was to me a record year, the bees commenced early and worked well. I had twelve swarms and casts, and secured in addition about 600 lb. of honey in sections and jars. This I think very satisfactory, and my hope for '99 is that it may continue *pro rata*.

"The fact of my being a member of the B.B.K.A., and also on the Committee of the Devon County Association, is some little evidence of the interest I take in bee-keeping

MR. S. HEAD'S APIARY, IVYBRIDGE, DEVON.

generally. My feeling is that, like gardening, it is calculated to afford both pleasure and profit to those taking an intelligent interest in it, and nothing gives me greater pleasure than to lecture when I can have hearers, or to talk to individuals in order to induce them to keep bees.

"In conclusion, my advice to beginners is, do not do as I did, but get a new hive from a good maker when starting, and only buy bees from one you can rely upon, it will be much the cheapest in the end. As to foul brood, I think it should be treated as we do swine fever, *i.e.*, stamp it out at once. No doubt some are more successful in dealing with it than others, but in my case it was only a tantalising deferred hope, putting off the evil day; in the meantime, getting little or no honey for all the trouble and anxiety in trying to save the bees.

"In the photo your humble servant is very much in evidence, also my foreman, who, like myself, is never happier than when among the bees, and who helps me at all times, and has lately become the owner of two hives and is now making more."

Queries and Replies.

[2233.]—*Uniting Bees.—Flour as a Pacifier.*—On June 27 I united the bees of a hive from which a swarm had issued to another very weak lot. The young queen of swarmed stock was hatched out on June 15, and I saw her flying on June 22nd and 23rd of that month, so concluded that she had mated safely. I removed the old queen of weak lot at the time of uniting and took precautions to dust both lots with flour. I saw the young queen on frame as I was uniting them, but up to quite late in the evening the bees behaved exactly as if they had lost their queen, running about on flight-board, &c. I therefore ask:—1. Would they do this if the young queen was not mated? 2. Is there any chance of her being mated now? She seems quite perfect, and the weather has been quite favourable for queen mating. There are also plenty of drones, so that the delay seems strange. I may say that there has not been the slightest sign of fighting between the united lots of bees. I have sections on, and there are so many bees in hive now that to remove surplus-chambers and examine combs for eggs and brood would be a difficult matter, which I would avoid if possible.—C. H. L., *Skipton, Yorks.*

Reply.—1. The commotion among the bees after uniting need cause no alarm; it would probably be confined to the "weak lot" from which the old queen was removed. 2. There is every likelihood of the young queen now being safely mated and laying; consequently, if bees are working well and carrying in pollen freely, there is no need for removing supers to verify the point by actually seeing brood in combs.

[2234.] *Transferring Old Combs and Bees to Frame Hives.*—My bees were driven from skeps into bar-frame hives in July last year by an expert. He fixed all old combs with brood taken from the skeps in the frames, where it is still. It was two years old when moved. Should I not remove the old combs and give sheets of new foundation? And if so, when ought I to do this? In renewing combs ought the frames of foundation to be placed in the centre of the hive or next the dummy?—B. B., *Ufford.*

Reply.—First let us say, we entirely disapprove of the—now happily almost disused—method of transferring old combs from skeps to frame-hives, and our correspondent's query tends to show the folly of it. Stocks in July should have surplus chambers on in such a season as this, and the time for renewing combs is May or early in June. For the rest we advise an examination of the hives to ascertain their condition so far as explaining why supers are not on if bees are healthy and strong, or if otherwise to find out the cause. Write again after inspection when we can reply in the light of more knowledge on the subject.

[2235.] *Malformed Queen.*—On June 27, one of my hives swarmed (3rd., I wanted the queens), but the bees went back to parent stock. Two days later I find the reason in a young queen with defective wings. Is this common? Last year I had a great many workers so deformed, but they appeared to come from my strongest hive. The wings are shrivelled.—G. Cheetham, *Boarhills, N.B.*

Reply.—Though not a common occurrence it is not at all rare to find worker bees malformed in various ways but chiefly with shrivelled wings, partly formed legs, &c. The mischief is rightly attributed to want of sufficient warmth for proper development, and may occur as readily in a strong stock as a weak one, by eggs being laid in cells on the extreme edge of brood-cluster.

[2236.] *Transferring Bees from Box to Frame Hive.*—A friend of mine has two old stocks, each of which has sent off a swarm this year. The old stocks in question are in boxes 2 ft. long by 1 ft. wide and 8 in. in depth, with a hole at the end for the bees to enter by. I can only get to the combs by unscrewing one side of the box off. I should be pleased if you would tell me the best way to get the bees and combs out into a frame hive?—H. G., *Wickham Market, July 5.*

Reply.—If not sufficiently experienced to keep bees in subjection while operating, we should not advise your undertaking so stiff a job as the one proposed. Besides, unless the combs in boxes are fairly new and in good working order, they are not worth transferring to new hives.

[2237.] *Transferring from Skeps to Frame Hive.*—During the first half of May I placed eighteen straw skeps on top of bar-frame hives made to take standard frames. Most of the latter are full of bees, the outside combs being covered. I therefore ask:—1. When should skeps be removed? 2. How can I get rid of ants, they get over the quilts?—RUSTIC, *Sussex, July* 4.

REPLY.—1. It is rather unfortunate that skeps have been left on so long, seeing that the season is almost too far gone to expect surplus chambers filled on the stocks this year. However, there will no doubt be a good "take" of honey for extracting in the skeps when removed, as bees will have made them their store chambers. We should raise a few of them to get some idea of their weight. 2. To get rid of ants, some put a ring of grease round each leg of the hive, or a tarred string will stop their climbing for a time.

Echoes from the Hives.

Wooler, Northumberland, June 26.—Things are looking very hopeful with us here at present, all stocks doing well and honey plentiful, but of what quality I cannot say, not having taken any off yet, and I follow the tiering-up system, story above story, in working racks of sections, placing one rack above another, to get the sections well finished. Swarming has been going on apace in this district, although I have only had two swarms myself, on June 2 and 4. But as several showers of rain have fallen lately it has rather checked swarming. I hope it will also prevent the honey dew mischief, such as was experienced last year; and seeing that we are having favourable weather, bee-keepers in general will be more inclined to take the photographer's advice—"Please, look pleasant."—J. WADDELL

Hatfield Heath, Harlow, Essex, July 10, 1899.—After doing very little but mischief from June 18 to July 5, bees are working fairly well now on the remaining forage. There are no limes here, but we anticipate a small flow of honey shortly from the second crop of sainfoin. My bees did well during the second week of June; then came strong, dry, east winds in the day and very cold nights. We had also severe night frosts on June 13, 14, and 15. The frost on 14th was very severe, doing much damage to potatoes and other tender vegetables, from which many of them have not recovered. The recent thunderstorm has helped to save the season from being a very poor one here, and what would have been worse near the towns, for I am sorry to hear that many of our country bee-keepers have taken no honey at all this season. We know too well that there is "mischief still for idle hands to do," and it seems ditto for little idle mouths and claws, for in the interval of idleness mentioned above, the bees busied themselves by robbing, killing drones, gnawing foundation, and some etceteras which might be added.—W. LOVEDAY.

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING JULY 8, 1899.

1899.	Bar. in.	Tem. 9am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
July 2....	29·48	55·0	59	51	8	54·7	·04
" 3....	29·79	57·3	62	54	8	57·7	·12
" 4....	30·02	61·1	64	54	10	58·7	—
" 5....	30·18	63·5	74	46	28	59·0	·01
" 6....	30·21	65·5	76	51	25	62·2	—
" 7....	30·23	68·8	81	52	29	65·5	·03
" 8 ...	30·19	66 3	76	58	18	66·4	—
Means	30 01	62·5	70·3	52·3	18 0	60·7	·20*

* Total, ·20 in.

Mean vapour tension, 0·411 in.; mean relative humidity, 73 per cent.; mean temp. of the dew point, 53°·4. The rainfall, viz., ·20 in., =4,524·60 gallons, or 20·20 tons to the acre, or 1 lb. to the square foot. For the week ending July 1, the mean temp., viz., 60°·8, was +1°·4, and the rainfall, viz., ·78 in., +·36 in. The rainfall for May 28 to July 1, viz., 1·58 in., is −·74 in.; and for January 1 to July 1, viz., 10·41 in., −·53 in. The rainfall for April to June, viz., 5·05 in., is −·87 in.; and for January to June, viz., 10·00 in., −·85 in. The rainfall for April 2 to July 1, viz., 5·46 in., is −·37 in.

RAINFALL.

April—June, 1899.

1899.	Rainfall. In.	Average. In.	Difference. In.
April.....	1·72	1·76	−·04
May	2·16	2·27	−·11
June	1 17	1·89	−·72
Totals	5·05	5·92	−·87

April 2—July 1, 1899.

1899.	Rainfall. In.	Average. In	Difference. In.
April 2-29	1·72	1·59	+·13
April 30-May 27....	2·16	1·92	+·24
May 28-July 1	1·58	2·32	−·74
Totals	5·46	5·83	−·37

January—June, 1899.

1899.	Rainfall. In.	Average. In.	Difference In.
Jan.-June	10·00	10·85	−·85

January 1—July 1, 1899.

1899.	Rainfall. In.	Average. In.	Difference. In.
Jan. 1-July 1	10·41	10·94	−·53

Absolute drought on 14 days, viz, Feb. 22-March 7; and on 24 days, viz., May 25-June 17. Partial drought on 37 days, viz., Feb. 16-March 24; total fall, ·29 ins.

FRED. COVENTRY.

Duddington, Stamford, July 10.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of June, 1899, was £2,791.—*From a return furnished to the* BRITISH BEE JOURNAL *by the Statistical Office, H.M. Customs.*

Bee Shows to Come.

July 13 and 14 at Louth.—Honey, Hives, and Bee Appliances in connection with the Lincolnshire Agricultural Society. Bee Department under the management of the Lincolnshire B.K.A.

July 19, 20, and 21 at Hull.—Bee and Honey Show in connection with the Yorks Agricultural Society.

July 19 at Pembury, Tunbridge Wells.—Honey Show in connection with the Gardeners' Flower Show. **Open class** for this season's honey. Schedules from W. Kemp, 2, Hill View, Pembury, Tunbridge Wells. **Entries closed.**

July 21 and 22, at Knowle.—The annual exhibition of the Bristol, Somersetshire, and South Gloucestershire B.K.A. will be held in connection with the local Horticultural Society's show. Schedules from Miss H. Dawe, Long Ashton, near Bristol. **Entries close July 15.**

July 22, in the Home Park, Windsor.—Show of Honey and Bee Appliances, Berks B.K.A. (Windsor District), in conjunction with the Prince Consort's Association.

July 26 and 27 at Wolverhampton.—Annual Bee and Honey Show of the Staffs. B.K.A. in connection with the Staffordshire Agricultural Society's Show. Open classes for Sections, Extracted Honey, and Bee Appliances. **Entries closed.**

July 27 at Cambridge.—Honey Show in connection with the Cambs. and Isle of Ely Agricultural Society. Open class for single 1-lb. jar of honey. Schedules from C. N. White, St. Neots.

August 2 at Henbury, near Bristol.—The Henbury District B.K.A. show of honey, &c., in connection with the Horticultural Society's show. Open classes for six 1-lb. sections and six 1-lb. jars, extracted honey. Schedules from C. A. Newman, hon. sec., Henbury, near Bristol. **Entries close July 25.**

August 2. In Neston Park, Neston, Wilts.—Honey Show in connection with the Atworth and District Horticultural Show. Seventeen Classes for Honey and Bees, including Single 1 lb. Jar and Single 1 lb. Section, with no Entry Fee. Schedules from J. P. Inkpen, Neston, Corsham. **Entries close July 26.**

August 3 at Loughton, Essex.—Honey Show in connection with the Loughton Horticultural Society Annual Exhibition. Four classes for honey open to County of Essex. Entry fee, 6d. Schedules from C. E. Skinner, Hon. Secretary, Loughton. **Entries close July 29.**

August 3, 4, 5, and 7, at Liverpool.—Bee and Honey Show in connection with the Royal Lancashire Agricultural Society. Special Classes and Liberal Prizes for Honey, &c. Lectures and demonstrations with live bees in Bee Tent.

August 5 at Helsby, Cheshire (in connection with the annual flower show.) Open classes for extracted honey and bees-wax. Schedules from Dr. Briant, secretary, Helsby, Warrington. **Entries close July 31.**

August 7 at Beddington Park, near Croydon.—Surrey B.K.A. Annual Show, in connection with the Beddington, Carshalton, and Wallington Horticultural Society. Increased prizes. Five Open Classes, including single 1-lb. jar and section, with free entry. Schedules from F. B. White, Hon Sec., Marden House, Redhill. **Entries close July 30.**

August 7, at Melton Constable Park.—Annual Honey Show of the North Norfolk B.K.A. Three open classes, including one for single 1-lb. jar of honey. Schedules from Hon. Sec., C. J. Cooke, Edgefield, Melton Constable. **Entries close July 28.**

August 7 and 8, at Delapre Park, Northants.—Northants B.K.A. Honey Show in connection with the Horticultural Exhibition. Three open classes with special prizes, including one for single 1-lb. jar of honey (entry free), six prizes, first prize, 20s. Schedules from Robt. Hefford, Hon. Sec., Kingsthorpe, Northants. **Entries close August 1.**

August 9, at Marlow, Bucks.—Annual Show in connection with the Marlow Horticultural Society, under the auspices of the Berks B.K.A. Bees, Hives, and Appliances, Honey, &c. Eleven Open Classes. Liberal Prizes.—For schedules, apply to A. D. Cripps, Hon. Sec., High-street, Marlow, **Entries close August 5.**

August 16 and 17 in St. John's Schoolroom, Blackpool.—Annual Show of the Blackpool and Fylde Horticultural Society. Exhibition of honey under the auspices of the Lancs B.K.A. Open classes for twelve 1-lb. sections and twelve 1-lb. jars extracted honey, with prizes of 20s., 10s., and 5s. for each. Schedules from R. Atken, Sec., 17, Devonshire-road, Blackpool. **Entries close August 7.**

August 17, at Goole.—Bee and Honey Show in connection with the Goole and District Agricultural Society. Six open classes, including one for single 1-lb. jar (entry free). Schedules from J. Luddington and N. S. White, Secs., Lindum House, Goole. **Entries close August 12.**

August 18, at Exeter.—Devon B.K.A., Second Annual Show of Bees, Honey, Hives, and Appliances, in connection with that of the Devon and Exeter Horticultural Society. Ten open classes. Schedules from Mr. H. Tolson, Park House, St. Thomas, Exeter. **Entries close August 12.**

August 25 and 26, at Dunfermline, N.B.—Bee and Honey Show, West of Fife and District B.K.A., in connection with the Horticultural Society. Schedules from Geo. Weston, Sec., Grant's Bank, Dunfermline. **Entries close August 22.**

August 29 at Northwich.—Cheshire B.K.A. Show, in connection with the Cheshire Agricultural Society. Open classes for honey, wax, and single hives. Schedules from Mr. T. A. Beckett, St. Werburgh's Chambers, Chester. **Entries close August 8; at double fees August 15.**

August 30 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 23.**

September 6 and 7 at Birkenhead.—Cheshire B.K.A. Show, in connection with the Wirral and Birkenhead Agricultural Society. Liberal prizes for hives, honey, &c. Eight classes, including one (free entry) for 1-lb. jar of honey with four prizes. Honey tent in good position in show yard. Bee lectures and demonstrations. Schedules from Mr. Edwardson, 6, Hamilton-square, Birkenhead. **Entries close August 23.**

September 13 and 14 at Derby.—Eighteenth annual show of the D.B.K.A., in connection with that of the Derbyshire Agricultural Society. Eight open classes, including two with free entry for 1-lb section and 1-lb. jar of honey. Schedules from F. Walker, hon. sec. D.B.K.A., 64, Gerard-street, Derby. **Entries close August 31.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

ERRATA.—In the hurry of preparing for press last week a couple of printers' errors crept in unnoticed, viz.: on page 264, the word "sensation" (twenty-five lines from top of second column) should read *sunshine.* The other "slip" occurs on page 267, in reply to "E. C. R. W.; to make sense of which the words *swarm having issued nine or ten days ago and the subsequent return of bees after,* must be omitted. Attention has also been drawn to awards at Royal Show (Class 354) for three shallow frames of comb-honey as printed on page 239. It appears Mr. R. Brown got third prize not second, the latter going to Mr. Geo. Wells.

Allowing Bees to transfer Themselves from Skeps to Frame Hives.—So many letters on this subject have reached us, that it is not only impossible to find room for separate replies to each, but would entail

much repetition, we therefore insert a few replies which will cover others bearing on the same point.

H. T. H. (Saucton Vicarage).—As skep is now only half filled with comb it is very unlikely that the bees would work down into a frame-hive this season. We should defer transferring till next season.

F. B. (Westmoreland).—The bees of a skep that swarmed on June 9, will not take possession of a frame-hive this year.

H. Mason (Bexley Heath).—Defer transferring till next May and then set skep above frame-hive fitted with full sheets of comb foundation, and allow bees to work down into the latter.

Rex (Mold).—*Requeening Hives.*—The plan proposed will be rendered safer in your hands by allowing three days to elapse after removal of old queen before introducing a ripe queen-cell.

M. Hider (Tunbridge Wells).—*Bees not Taking to Sections.*—Racks of empty sections should never be given to swarm directly after hiving. Had the giving of surplus room been deferred till the hive was about three-parts combed, the bees would probably have taken possession soon.

J. E. B. (Stockport).—*Transferring Bees and Combs to Frame-Hives.*—If you are sufficiently experienced to drive bees and transfer combs of the current year's building into frames without damage, the plan proposed will no doubt answer very well; but it is too ticklish a job for a beginner to undertake without incurring risk.

W. Head (Whitney-on-Wye).—*Bee Forage.*—The flowering shrub sent is commonly known as the Snowberry (*Symphoricarpos*), and is a great favourite with bees.

W. & J. Lipscombe (Glamorgan).—*Driven Bees taking Wing.*—1. There must have been something wrong in carrying out directions in "Guide Book" to bring about the result given. No mention is made of transferring the combs and brood; was this done or was the brood in skep combs allowed to perish from chill? We have never known a failure where the work was properly carried out. 2. If the skep into which the bees entered (after taking wing) was empty, they should have been at once returned to their original home, but the particulars sent are too vague for us to advise you with safety.

Apibus (Keyworth).—*Dealing with Swarms.*—1. In view of increase by natural swarming skeps with two-year-old queens are the most useful, young queens being less inclined to swarm than older ones. 2. When foundation falls down after hiving, the frames must be lifted out as best you can, and the mishap re-adjusted. We cannot possibly tell exactly how to go about it without personal inspection of the damage. 3. We cannot make out what what advice is wanted in reply to this query.

A Reader (Tewkesbury).—*Bee Forage.*—1 and 2, commonly called snowberry and Japanese tea plant respectively, are both much visited by bees and yield well of honey, but seldom found in sufficient quantity to largely affect the yield. No. 3 we cannot recognise without bloom.

Sunshine (Birmingham).—We have not sufficient acquaintance with the "Lickey Hills" to say if the heather bloom growing thereon yields a crop of honey.

M. E. (Chapeltown).—*Starting Bee-keeping.*—1. It was quite the correct thing to give the bees surplus-room the first week in June, if bees were in forward condition; but it is, we fear, quite hopeless for you to expect to make a success of bee-keeping without more help than can be got from a bee journal. A reliable guide book is indispensable as giving full directions for all bee work and the management of an apiary. 2. It is a very risky thing for a beginner to buy stocks of bees without first having them inspected by some one able to detect disease if present.

H. T. M. (Saltash).—*Honey Samples.*—The colour and consistency of sample are both good, but flavour and aroma are poor. These faults have their origin in the source from whence the honey is gathered.

A. E. S. (Leicester).—*Dwindling Stock.*—The reasons why stock makes no progress can only be safely determined by inspection of the combs, brood, and queen. If the "expert" referred to is a reliable man, he should be far better able to judge after examination than we can at a distance and from description only. If a piece of comb containing brood was sent we could tell if the stock is diseased, without being able to say for certain if the old queen had been superseded or not.

F. G. (Ealing).—*Dealers and their Customers.*—We have not heard of any dealer refusing a catalogue "post-free" when so advertised. The "grievance" complained of by a dealer, on page 76 last year was having to pay a surcharge of 1d. on applications for catalogues. The real trouble, we fear, arises most often in consequence of orders being sent at the busiest season, when less attention can be given them than at other times.

West Kent (Tunbridge Wells). — Honey received is of good flavour and fair in colour, &c. It is from mixed sources, but mainly sainfoin.

J. O. B. (Wellington, Som.).—*Guernsey as a Bee District.*—We have no personal experience of Guernsey as a locality for bees, perhaps some of our readers in the Channel Islands will kindly supply the information asked for by our correspondent.

P. J. Blyth (Wien).—We fear your letter must have miscarried, as no trace of it can be found here. Kindly repeat queries and we will reply by post.

*** *Several Letters are in type and will appear next week.*

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

PURE HONEY FOR SALE. For sample and price, write to DAVID HANCOX, Deddington, Oxon. 301

7/- DOZEN SECTIONS, light colour, very good. LING, Shady Camp, Linton, Cambs. 300

CHOICE YOUNG QUEENS of the highest quality at low prices. Send for my circular. EDWARDS, "Beecroft," Ashford, Staines. 297

WANTED, Cowan Reversible EXTRACTOR, with gearing. Perfect condition. Vicarage, Burton Leonard, Leeds. 299

PRIME NATURAL SWARMS, 12s. 6d. Good second ditto, with '99 Queen, 8s. 6d. Cases returnable. WOODS, Normandy, Guildford. 298

FINE SWARM of BEES. Natural Firsts. Sent day of order, 8s. BASTABLE, Church Knowle, Wareham. 275

W. B. C. HIVES.—Make your own at third the cost. For particulars, send stamped addressed envelope. PRIDEAUX, Whitchurch, Salop. 302

PAIR VARIEGATED PLAINHEAD NORWICH CANARIES, cost 25s. offers or exchange for swarm complete. WEISE, 41, Selby-road, Anerley. 294

FOR Delivery, 1st August, strong three-frame nuclei '99 tested QUEEN from grand strain, 15s. GUTHRIE, Expert, Doonfoot, Ayr. 296

FOR DISPOSAL, several lots of Bees (grand workers) in double and single bar-framed hives; also some exceedingly strong May swarms. All honey untouched. Mrs. L., Vasterne Manor, Wootton Bassett, Wilts. 295

1899 LAYING QUEENS, reared from Stock possessing the most desirable qualities, 5s.; two, 9s. Virgin Queens, 3s.; two, 5s. WM. LOVEDAY, Hatfield Heath, Harlow, Essex.

RABBITS, Lop-ear, one of the best strains, ears growing up to 26 inches. Outdoor reared. Very hardy. Bucks, fawn or grey, 3 months old, 3s. each; bucks, fawn, or fawn and white, 2 months old, 2s. each; 2 for 3s. 6d. Leeks, strong plants for present planting, 100, 6d. Postage free. WM. LOVEDAY, Hatfield Heath, Harlow, Essex.

FOR SALE (cheap), a Mahogany Observatory HIVE takes two standard frames; very neat; almost new. DALE, Colwich, Stafford. 287

PROLIFIC QUEENS. Nuclei and Swarms. Stocks—Skeps or Frame Hives. E. WOODHAM, Clavering, Newport, Essex. 286

SELECTED FERTILE ENGLISH QUEENS, 5s. 6d. each, post free, in travelling cage. JEMEISON & BAKER, Bee Specialists, Dringhouses, York. 273

ENGLISH MADE HONEY JARS (1-lb. screw-cap). 14s. per gross; sample, 6d. JAS. DYSON, Stainforth, Doncaster. F.N.

QUEENS, STOCKS, NUCLEI, and SWARMS. A few more orders can be accepted. List free. Rev. C. BRERETON, Pulborough, Sussex.

COMFORTABLE APARTMENTS for Brother Bee-keepers visiting Douglas. HORSLEY, Merridale House, Empire-terrace, Top of Castle Drive, Isle of Man. 183

FURTHER REDUCTIONS. TRANSPARENT CELLULOID QUILTS, post free, 1s. 6d.; CELLULOID QUEEN EXCLUDERS, post free, 1s. 6d. R. H. COLTMAN, Bee-Appliance Maker, Burton-on-Trent.

FINEST BEESWAX FOUNDATION, 1s. 9d. lb. brood. Special parcel: Six sheets Foundation and Queen Excluder, 2s. 6d., post paid. PARKES, Bee Expert, Oldbury. 288

PROLIFIC FERTILE QUEENS, 4s. 6d. each; with Frame of Brood and Bees, 6s. 6d. Guaranteed healthy. Strong Sprouting Broccoli Plants, 1s. hundred. WOODS, Normandy, Guildford. 293

LACE PAPER for GLAZING SECTIONS. 100 strips, 7d., 200, 1s. 2d., 300, 1s. 6d., 500, 2s. 3d., 1,000, 4s. Post free. Best quality. Neat Patterns. W. WOODLEY, Beedon, Newbury.

Prepaid Advertisements (*Continued*).

QUEENS, raised on scientific principles and under best conditions. Prices: Virgins, 2s.; Fertile, July, 4s. Booked in July for delivery end August and September, 3s. 6d.; otherwise 3s. 9d. Reduction for quantity. Satisfaction and safe arrival guaranteed. Cash with order. TAYLOR, Grasmere, Ilminster. 291

BRICE'S RELIABLE QUEENS. Well-known strain, one quality, one price. Mated tested Queen, 5s. 6d. Post free in perfected travelling and introducing cage. Safe arrival guaranteed. HENRY W. BRICE, 100, Brigstock-road, Thornton Heath.

2/2.—BEE GLOVES, as recommended by the great bee authority the Rev. W. E. Burkitt, 2s. 2d. per pair, post paid. Special terms for wholesale buyers. Manufactured by EDWARD REYNOLDS, Glove and Gaiter Manufacturer, Andover. 257

PURE IMPORTED ITALIAN QUEENS, 5s. each.
" " CARNIOLAN QUEENS, 6s. each.
ENGLISH QUEENS (best quality), 5s. each.
Safe arrival guaranteed in self-introducing Cages.
Cash with order.
HOWES, MELTON HOUSE, KNOWLE, BRISTOL.

THE NEW "W.B.C." UNCAPPING KNIFE,
may be had retail from all dealers in Bee Appliances, and wholesale from
S. BLOMFIELD & CO.,
MANUFACTURING CUTLERS,
33, CHARLES STREET, HATTON GARDEN, LONDON.

YORKSHIRE AGRICULTURAL SOCIETY.
PATRON—*H.R.H. the Prince of Wales, K.G.*
PRESIDENT—*The Right Hon. Lord Middleton.*
MAGNIFICENT EXHIBITION OF
STOCK and IMPLEMENTS, &c.,
AT HULL,
WEDNESDAY, THURSDAY, and FRIDAY,
JULY 19th, 20th, and 21st, 1899.
JUMPING COMPETITIONS. MILITARY BANDS.
ADMISSION.
Wednesday, 9 a.m. to 6 p.m. ..... Half-a-Crown.
" 6 p.m. to 8 p.m. ..... One Shilling.
Thursday, 8 a.m. to 8 p.m. ..... One Shilling.
Friday, 8 a.m. to 6 p.m. ..... One Shilling.
Season Tickets, Half-a-Guinea each.
Reserved Seats on Grand Stand, Five Shillings each.
MARSHALL STEPHENSON, Secretary.
York, July 8th, 1899.

TO BEE-KEEPERS IN KENT.
BEES and BEE-APPLIANCES
of best quality
SUPPLIED PROMPTLY, CARRIAGE PAID to any Station in Kent, at low prices. Our Price List, free on Application, gives descriptions of **Sladen's Sections** and other Specialities.
F. SLADEN, Ripple Court Apiary, DOVER.

BEE -APPLIANCES -HIVES and -KEEPERS' WOOD.
Illustrated Catalogue Free.
E. J. BURTT, Manufacturer, **Gloucester.**

Editorial, Notices, &c.

THE SEASON'S HONEY CROP.

The information already to hand regarding the probable honey crop of '99 is sufficiently conclusive to warrant us in again inviting attention to the subject of marketing the present season's output. Not only so, but several communications have reached us bearing upon the question raised in our issue of July 6, which are full of suggestiveness, so far as emphasising our point, when alluding to the divergence of opinion in the matter of "prices." They also, in some measure, serve to show how the publication of "current prices" would coincide with the views of honey-producers, and how their interests would be affected thereby.

Our limited space, unfortunately, precludes the publication of any but the merest extracts from one or two of the letters, but a few lines of quotation will suffice to arouse interest in the rest. The first bears upon the possibility of competing with foreign honey, is dated from Cheshire, and the writer says:—"If Mr. Woodley will act on the suggestion contained in the editorial footnote to his letter on page 261, and will take the initiative in arranging a meeting of leading honey-producers, I for one—as a producer and a large buyer—will attend or be represented thereat." He then—after giving his reasons for advocating the advisability of prompt action—goes on to say, "In a recent conversation with the 'buyer' for a big commercial house, the latter gentleman said, if British bee-keepers would submit samples of their honey equal in quality to the best grade of Californian (of which they were large buyers) and would supply it at the *current market price* of the Californian article they would give the home-producer the preference, and take delivery in lots of two to five tons!"

Then, after dealing with some minor business details, he continues:—"The present current price for best-grade Californian honey is about 40s. per cwt., the price to include all cost of packing. At this figure the honey will have to be delivered, and inclusive of cost of packing and commission. This means that the producer would receive about 3½d. per lb. for his honey."

The above needs no comment from us, except to say that we hope the time is some distance off when British honey of even fairly good quality will have to be sold for 3½d. per lb.

Mr. C. Howes, Bristol, also writes approving of the idea of a meeting of honey producers to discuss prices, but thinks county associations should take the matter up with the view of preventing the "down-grade of prices, which, if continued," he considers, "will tend to make bee-keepers give up the craft in despair."

As one cause of depression, Mr. Howes quotes the case of a Somersetshire "parson, whose sections are sold retail in a shop at 7½d. each," because—according to the shopkeeper—the parson, "who's got a lot o' honey this year, wants to zell it for a bit o' pocket munney afore 'e goes fur his 'oliday."

Mr. Howes' idea of the County B.K.A. stopping the "down-grade" sounds very curious compared with the strong advocacy—by a leading "County" Association official—of the idea that the Association should prove to its members that 3d. or 4d. per lb. for honey is a "paying price!"

Our columns are so occupied with overdue and pressing matter this week that we must defer further remarks till next issue. Meantime, we have perhaps said enough to call forth some further expressions of opinion on the question of marketing honey.

LINCOLNSHIRE B.K.A.

ANNUAL SHOW.

This show was held on July 13 and 14 at Louth, in connection with that of the Lincolnshire Agricultural Society. The entries in the bee and honey classes number 128, and as regards attendance was the most successful show ever held by the Lincolnshire B.K.A., which now numbers over 500 members. All the classes were well contested. The honey extracted (of which about half a ton was staged) was of excellent quality and the sections were pronounced by the judges the finest they had ever seen, involving considerable difficulty in awarding the prizes.

Mr. F. J. Cribb and Dr. Carline officiated as judges, and made the following awards:—

Honey Trophy (weight not over 250 lb., three entries).—1st, T. W. Pinder, Little Casterton, Stamford; 2nd, H. O. Smith, Louth; 3rd, H. J. Banks, Wragby.

Twelve 1-lb. Sections.—1st, W. Patchett, Thoresway; 2nd, H. F. Beal, Andover; 3rd,

R. Brown, Somersham; 4th, Rev. H. Goffe, Thoresway.

Twelve 1-lb. Jars Extracted Honey.—1st, H. F. Beal; 2nd, — Pears, Mere, Lincoln; 3rd, W. Hatliff, Thoresway; 4th, Rev. H. F. Goffe; h c., W. Patchett.

Twelve 1-lb. Jars Extracted Honey (County only).—1st, H. Pears; 2nd, W. Pinder, Tetford; 3rd, Rev. H. F. Goffe; 4th, W. Cooke, Navenby; v.h.c., W. Patchett.

Twelve 1-lb. Sections (Members only).—1st, Rev. H. Goffe; 2nd, A. W. Weatherhoff, Willoughton; 3rd, W. Patchett; 4th, T. W. Pinder; h.c., H. Pears.

Six 1-lb. Jars Extracted Honey (Lincs Cottagers only). — 1st, W. Hatliffe; W. Patchett; 3rd, F. G. Davy, Leybourne.

Twelve 1-lb. Jars Granulated Honey.—1st, D. Seamer, Grimsby; 2nd, J. Berry, Llanrwst; 3rd, B. Boulton, Lutton.

Beeswax (3 lb. to 5 lb.). — 1st, J. Berry, Llanrwst; 2nd, Dr. P. Sharp, Brant-Broughton; 3rd, W. Paulger, Scothorne.

Two Shallow Frames of Comb-honey.—1st, F. S. Smith, Louth; 2nd, F. A. Cartwright, Keddington; 3rd, Tom Sells, Uffington.

Observatory Hive with Bees and Queen.—1st, R. Godson, Tothill; 2nd, Dr. P. Sharp; 3rd, D. Seamer.

Collection of Appliances. — 1st, W. P. Meadows, Syston; 2nd, R. H. Coltman, Burton-on-Trent.

Most Complete Hive for General Use (Price not to exceed 25s.).—1st, W. P. Meadows; 2nd, R. H. Coltman; 3rd, W. Garner, Dyke, Bourne.

Complete Hive for General Use (Price not to exceed 12s. 6d.).—1st, and 2nd, W. P. Meadows; 3rd, W. Garner.

Lectures were given every day of the show in the bee-tent by Messrs. Meadows and H. O. Smith, and were well-attended.

Mr. F. J. Cribb examined a candidate for the third-class certificate of the B.B.K.A.—(*Communicated.*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

HIVE MANAGEMENT.

A LADY BEE-KEEPER'S VIEWS.

[3739.] There are several points that I would like to bring forward in your valuable journal to the notice of readers.

1st, *Ventilation.*—Why should we ventilate our hives on a different principle to that on which we ventilate our rooms? We are always recommended to ventilate our hives by raising the body of the hive at the *bottom*, &c.; but, considering that the bees introduce a current of fresh air, by fanning at the bottom of the hive, it appears to me that *top* ventilation is needed. And considering the physical law, that heated air ascends, I have ventilated my hives in extreme heat, always to the immediate relief of the bees, at the *top*, by taking off the hive tops for half an hour on hot evenings after sundown, and replacing them with a wooden wedge inserted, to allow of a slight escape of air at the back. If the bees are fanning distractedly the tops can be removed any evening for half an hour, and if the weather turns cooler the wedges can be taken out and the tops closed on again tight at any moment.

The only time I noticed the bees hanging out as if they were uncomfortably warm and stuffed up, was on June 12, and they were quite happy the next day, after my system of ventilation. Two days later, I had to take out the wedges on account of cold. I have ventilated at intervals in this way during June and July, and although I have some very full hives, two of them with two doubling-boxes and two supers on as well, I have had no swarming.

2nd, *Examining Hives in Spring.*—I consider it a grave mistake to make any exhaustive examination of hives in the spring, or any cleaning up. April and May are chilly, and the loss of heat checks brood and does serious damage. The autumn is the right time to put the bees into clean hives, before packing them for the winter. One can tell fairly well in the spring how the bees are going on from outside observation. And the giving of a few sheets of extra foundation as the warm days come on does not take much time nor require much exposure.

3rd, *Restricting Brood-raising.*—It is, to my mind, also a grave mistake to restrict brood-raising. If many bees make much honey, more bees will make more honey; and I consider it no less a grave mistake to use queen-excluders, for they cause great loss of life to the bees, and they are troublesome to handle in use. Supposing one has wintered a stock on seven or eight frames two-thirds full of honey, and that they have been properly packed and have come through the winter well. When the first warm weather comes on, and the bees in the body of the hive are fully occupied with the new sheets of foundation, a doubling-box should be put on, *without* queen-excluder, so as to allow plenty of room for breeding; otherwise the bees will fill all the combs with honey, and the queen have no room to lay her eggs. A second doubling-box on the top of the first can be added, or a rack of sections, or both. The queen, having plenty of room, will not seek to go aloft; and the combs in the second doubling-box will be found free from brood, and the combs can be removed (and replaced by sheets of foundation) to be sold as they are, or extracted.

4th, *Sections.*—As to sections, bees do not

like them, even without queen-excluders; they are a lot of bother to prepare and to remove when full. If we want comb-honey, let us sell it in the standard frames. It is only a matter of transport, and I hope to exhibit shortly a specially designed tin for the carriage of standard frames of comb-honey by rail or otherwise. No more sections, no more swarming! The practical aspect of the case is that we shall have combs of honey ready for sale or exhibit in May or June without any restriction of brood or risk of swarming or damage to stock. If we want to get our sections on the London market in time for the season, we have to take the risk of damaging our whole honey production by crowding the bees till they swarm. By working the combs in doubling-boxes, we can give ample protection from cold by leaving the chaff cushions on top, and we have the advantage for cold and heat of the double wall and space between the outer wall of the hive, so that ventilation is easy if required. We can take out the combs as they are filled without a great disturbance to the bees. The saving of labour is everything in bee-keeping, and those who do not want to get their combs early on the market can put one doubling-box on top of another until they can find time to take the lot, to sell them as they are or extract them. Let the bees manage their own affairs their own way. We must not seek to rule, but only to direct. There is too great a desire to rule in bee-keeping, and the bees show themselves often more masterful than their would-be rulers.

5th. *Bees and Flowers.*—I have only time to mention that Mr. Hamlyn-Harris makes a mistake if he fancies bees do not visit yellow flowers, and that they prefer scarlet flowers. There are very few scarlet flowers to be had out in the open. Bees do not go to scarlet poppies. They love genista in the green-house, and all the brooms, gorse, and yellow flowers available outside, viz., charlock, cabbage-flowers, tomatoes. They visit blue flowers much, larkspur, borage, Canterbury bells, cranebill, veronica, ancusa, &c. In fact, I cannot perceive that any one colour specially attracts bees, though all probably have individual attractions.—Coney Berry, *South Oxfordshire.*

[Our correspondent evidently has a mind of her own, and, as some one said, "By Jove! she lets us know it." Nor need we bee-*men* complain; we all want to learn, and earnestness is always to be commended, but by way of reply we, in all humility, venture to think she will take more kindly to orthodox and proved methods of bee management when she has gained in years and experience.—Eds.]

"INSECTS AND FLOWERS."

[3740.] I leave your readers to decide whether the criticism of your correspondent, Mr. A. T. Johnson (3729, p. 264), is a fair one. Having been at once stamped as "unscientific and unobservant" by one whom I have never had the pleasure of meeting, readers may already be prejudiced; but I am sure that no one who read my article (in the same spirit in which it was written) *carefully and thoughtfully*, could with any sense of justice write the remarks of "A. T. J." I do not pretend to be infallible, but if reading Darwin, Wallace and Bates, Allen, Lubbock, and a host of others, and then giving out their opinions as original means being "observant," I admit I shall have to "climb down," for my observations, faulty and defective as they appear to be—and no doubt often are—are, at all events, my own.

The first flaw of which Mr. Johnson speaks is in taking exception to my remark, "yet unexplored to any great extent"; but had he, however, been more "observant" himself, he could hardly help seeing with what care *the whole sentence*—nay, the whole article—was framed, and it in no way lays itself open to be found fault with in the way attempted. How much is written yearly on nearly every conceivable subject few have any idea, and yet can we always profit by what is written? And even if well-known naturalists have made statements in years gone by, can they always be taken as gospel? None know better than those who study science in the present day how very much has been written, and how whole libraries of the most valuable books of their kind and of their age have been rendered valueless to modern science on account of their ancient and as now proved incorrect notions, though they would not lose any of their interest. How much is mere "theory" and how much more must ever remain "theory"? Therefore, because many naturalists have studied various points, and, as I suppose my critic would say, "settled the matter," is that a reason why we should sit in our arm-chairs and blindly imagine that there is nothing to be learnt?

If we live to see another fifty years pass and go we shall be wonderfully surprised to note how very little, comparatively, we knew in this enlightened age.

Sir John Lubbock says:—

> Science summons us
> To that cathedral boundless as our wonder,
> Whose quenchless lamps the sun and moon supply;
> Its choir the winds and wares, its organ thunder,
> Its dome the sky.
> —H. Smith.

Where the untrained eye will see nothing but mire and dirt, Science will often reveal exquisite possibilities. The mud we tread under our feet in the street is a grimy mixture of clay and sand, soot and water. Separate the sand, however, as Ruskin observes—let the atoms arrange themselves in peace according to their nature—and you have the opal. Separate the clay and it becomes a white earth, fit for the finest porcelain; or if it still further purifies itself, you have a sapphire—take the soot, and if properly treated it will give you a diamond. While, lastly, the water purified and distilled will become a clear drop or crystallise into a lovely star; or, again, you may see, as you will, in any shallow pool

either the mud lying at the bottom, or the image of the heavens above. Nay, even if we imagine beauties and charms which do not really exist; still, if we err at all, it is better to do so on the side of charity, like Nasmyth, who tells us that he used to think one of his friends had a charming and kindly twinkle in his eye, and was one day surprised to discover that it was a glass one!

This extract, expressing as it does, my own feelings, will, I trust, not be taken as out of place, for I am sure the great tendency of a majority is to under-rate and to narrow science down to but very poor limits, and to hard and fast rules.

Any one reading Mr. Johnson's letter would gather that I had said bees did not work on yellow flowers. Speaking, as I did, in comparison with other colours, I said, "yellow is less frequently visited," and this I still maintain.

When criticising, it is just as well for the critic to confine himself strictly to the writer's phraseology; for instance, when I speak of green—a colour which is treated with extreme indifference—is it fair to find fault with the statement and condemn it because bees visit "yellow-green" flowers — a colour not even referred to? This strikes me as a most one-sided argument. Further, I am bound to have doubts in my own mind what your correspondent calls "scarlet"! But I have said enough in reply, being convinced that no good can come of it, seeing that the matters upon which your correspondent differs are insignificant at the best, and such, upon his own confession, which he does not understand. May I also suggest that critics should read the papers carefully, and thoroughly grasp the writer's ideas before commencing their work of demolition? — R. H. Hamlyn-Harris, F.Z.S., F.E.S., &c.; *Zoological Institute, Tübingen University, Germany, July* 10.

DRIVING BEES OUT OF BOXES.

[3741.] Every bee-keeper knows it is easy to drive bees out of skeps, but a substantial box is another affair; having, however, purchased two stocks in boxes with fixed combs (they were advertised as skeps!), I wanted the bees in frame-hives. I hoped they would swarm, but they did not; the loss of a quart of bees in transit may have checked me. I was advised that the only plan of attaining my object was to saw off one side of the box; but the said sides were substantial 1 in. stuff, and I did not relish making the attempt, nor care to transfer the combs, soft and heavy with honey, so I determined to try driving. Fancy, too, the saw getting clogged with wax and honey! However, having made all preparations, I carried the box to a convenient place, fixed a skep over it, boring a hole for the back skewer or pin in the upturned edge, and others in the sides. A tap with the hammer fixed the side-irons and the skep was in position for open driving; the use of subjugating cloths prevented a chance rush over the sides. I did not rest the box flat, but tilted it up with a piece of brick. Then I rapped on the sides of box with a hammer, and in a minute or two up the bees ran. I then put them in a frame-hive fitted with foundation and a comb of brood to make them happy. The old box was then placed in its original position, with excluder zinc over and the frame-hive on top; it was only a makeshift, and had holes in the bottom. The next day I removed the box to a fresh place, and of course all the old bees joined the queen.

Encouraged by this success, I drove the other lot; but as the bees were more numerous and the box bigger, and the bees less inclined to leave, I used a mallet. The bees were too numerous for there to be any risk of the queen getting chilled by their leaving her to return to the box. In the second case the box was placed over the frames, with excluder zinc between. This, too, I afterwards removed to a fresh site. In twenty-one days I shall drive again, and the boxes will then be clear of brood. I separated them, not wanting honey stored in the boxes.

This will be an answer to the query of "H. G." (2236, p. 274), but it is getting rather late for the operation unless the neighbourhood affords late forage, heath, &c., or the bees are fed up.—Alpha, *Hull.*

[While sincerely thanking "Alpha" for kindly giving his experience of transferring as detailed above, we must remind the correspondent referred to ("H. G.," Wickham Market) that our editorial responsibility is limited to what appears on p. 274. Without this reservation, the responsibility for replies given to queries would—to use a vulgar but expressive colloquialism—be "all over the shop!" We say this in view of the fact that long experience has taught us the danger of relying on a description of bee-operations we have ourselves successfully carried through, for guiding others of whose practice or aptness we know nothing. Besides, the question put on p. 274 was how to transfer bees *and combs*, not bees only.

With regard to the plan successfully carried out, as described above, it will be interesting to know what happens to the old boxes removed to a fresh stand after the driving and subsequent uniting.—Eds.]

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

The bee-garden picture on next page—though only showing part of the apiary—is another welcome one, as presenting a sturdy lady bee-keeper of the homely English type, on whom it is pleasant to gaze. Mrs. Alpress tells us about herself and her bees so clearly and well that we add nothing to her words. She says:—

"It is now about eighteen years since I began bee-keeping, and I became possessed of my first stock under rather peculiar circum-

stances. My husband (a builder), was superintending the removal and packing up a farmer's furniture to a neighbouring village, but after packing was completed and just before starting, the farmer discovered that a skep of bees had been left behind in the garden. In the end the bees did not go, and I became their owner. From that skep and other sources I now possess thirty-nine stocks, all of the old English black variety and nearly all the hives are made to take the standard size frame. The whole of them were made at home by my sons. In the early part of my experience I alighted upon a work on bee-keeping by "Nutt"; and from that volume I gathered my first idea of working the bar frame-hive. The long hive near myself in the picture contains two stocks on Nutt's collateral principle. Though out of date now, I have always retained this hive and find visitors take great interest in it, as the bees can be seen at work through the glass by undoing a door. Of course, exposing the bees to the light is not quite the proper thing to do, but the hive is kept more for the interest it arouses than for anything else. I well remember a veteran bee-keeper in the village who had kept bees for over fifty years, explaining to me that he had never seen a queen or heard talk of anything about artificial combs ready for the hives (*i.e.* foundation). My commencement in bee-keeping was long before the formation of an Association for Huntingdonshire, but I attended the first meeting of the Hunts B.B.K.A., with Messrs. T. B. Blow and our friend, C. N. White, the energetic hon. sec. I have been a member ever since.

"As an exhibitor I have been fairly successful, winning many money prizes and bronze medal, but never was fortunate enough to get the highly-coveted silver medal, which I should very much like to win. I have only just missed it on several occasions. I may, perhaps, try again; but, when one considers that I have reached my sixty-third year, it makes me feel as if I do not want much running about now after bee-shows. I do most of my own bee-work, for my husband becomes exceedingly nervous if the sound of a bee buzzing is heard anywhere near him, and will take refuge in the house immediately rather than face it. For myself, however, I would much rather be stung by a bee than a nettle any day.

"I have a little difficulty in disposing of my honey readily. I work chiefly for sections rather than extracted honey, as I find it less trouble for me. Some of my hives have given me 62 lb. of honey in sections in a season, whilst others have done almost nothing.

"Last, but not least, I have been a regular reader of your journals since their formation.

"The photo sent is by my younger son, who is an amateur photographer."

MRS. ALLPRESS'S APIARY, BROUGHTON, NEAR HUNTINGDON.

Queries and Replies.

[2238.] On Sunday afternoon, July 2, four stocks standing side by side, 4 ft. apart, were in a state of excitement, the bees flying in numbers round and about. Nos. 2 and 4 were very strong, but only Nos. 1 and 4 were likely to swarm. Not wanting a swarm, and to cool the bees, a garden syringe was used amongst the flying bees and on the fronts of the hives, and in a short time things were quiet again; but then it was found that No. 4 hive was minus a very large number of its inhabitants, while No. 2 had more than it could accommodate. It is safe to say that the bees from No. 4 did not leave the neighbourhood. On Monday morning the bees, being still packed in No. 2 like beans in a sack, a third rack of sections, with foundation, was put in; but further room being evidently required, the top rack full of bees was on Tuesday morning taken off and put in No. 4, being replaced by the comparatively empty one (of bees) from the latter. Both colonies accepted the situation quietly, but No. 2 (which had swarmed on June 1 and again on the 29, both swarms being returned) threw off on the 6th inst. a swarm which filled a large skep, the swarm being once more returned in the evening; and No. 4 (which had swarmed on June 6 and received it back the same day) swarmed again on the 9th inst. What could have been the cause of all this?—F. C., *Hants.*

Reply.—The probability is that syringing the bees with water brought about the demoralisation and consequent entering of the wrong hive. So far as swarming, the bees had evidently made up their minds to emigrate and would not be deterred.

[2239.] *Driving Condemned Bees in September.*—People about here will not have their bees driven till the first week in September. As I generally begin about 4 p.m., when most of the bees are home, I have found it quite a job to get them to leave the combs, one hour in some cases, and even more. Do you advise me to do it earlier in the day; or would a little thin syrup—with time to lick up—put them in better trim?—G. G., *Windlesham, Surrey.*

Reply.—There is no doubt that bees drive most readily in the middle of a fine day when many are abroad honey gathering. If deferred till sundown, and weather is cool, a sprinkling of thin syrup, as stated, will cause the bees to run more readily. It cannot be said that the first week in September is late for driving, seeing that much brood would be sacrificed if done earlier.

[2240] *Singular Mishap to Queen Bee.*—Being a constant reader of your Journal, I have become convinced of your sound judgment in giving good advice. I should therefore like to have your opinion on the enclosed queen bee. On July 8 I had my first swarm for this year from a straw skep. The bees settled on a gooseberry bush. After clustering for a few minutes they returned to the hive. I was at a loss to account for this, as the day was favourable for swarming; but, on looking over the ground I came across the queen disabled, and she died a few minutes after. She was about seven yards from hive and ten from the bush where swarm settled. On examining the queen I observed a lump—either a growth or formation of matter—near the thorax. Was this the cause of death? And is it the old queen?—C. H. Ingleborough.

Reply.—On removing the "lump" referred to, it became apparent that the substance had been attached to the queen for a long time, there being a distinct and deep indentation of old standing in the thorax of the insect. No doubt the queen issued with the swarm, and, after making an attempt to fly, fell to the ground, so that, being lost to the bees, they returned to the hive. The poor queen, however, must have ruptured some vital organ in the effort, owing to her maimed condition, and so perished. It is impossible to explain how the "lump" first became attached to the thorax, but an examination under the microscope proved it to be dried up particles of sand and soil or mud; probably soft and wet when it first got on the queen, and subsequently becoming dry and hard.

[2241.] *Leaving Surplus on Hives till End of Season.*—My four stocks are all supered either with racks of sections or shallow frames, some having three, some two, surplus chambers on each hive. The top chamber in each instance is now getting well filled, and if the present fine weather continues I must tier up still higher in order to give more room. This will necessarily make the hives very tall, for I should like to keep all the surplus honey on until the end of the season, if possible. But I am afraid that it will adversely affect the result if I build the hives so high, because of the bees having to travel so high to deposit honey in the topmost chamber. Besides, as I am still only an amateur, will not it be a stiff job to take off, say, four racks of sections from a hive at one time? I therefore ask:—1. Do you think it best to go on tiering up till honey gathering ceases, or remove a full chamber and substitute an empty one?

This season has been a mixed one for me up to the present. In the spring I thought my "take" would be a record, as I got my stocks very strong and bees working in supers in time for fruit blossom. But cold weather came, and the bees simply dawdled the time away. Thus the early promise looked like ending in failure. But what a change this last few days has brought about. I begin to wonder where to find a market for my honey if this weather continues. I hope it will be equally good for other bee-keepers as myself. Thanking you in anticipation of reply in next B.J.,—G. K., *Hornsey, N., July* 13.

Reply.—1. We advise immediate remova

of any surplus chambers in which the honey is quite sealed over. It will ripen indoors if kept in a warm room. This is said without reference to the supposed adverse effect of extra travel to bees in storing, for there will be no appreciable loss on this account. We would also offer a word of caution not to give too much extra storage room after July; it will tend to retard the sealing of combs already on, and may result in a lot of unfinished sections.

[2242.] *Renewing Queens.*—The "Guide Book" says:—"Queens are best in their second year; after that they decline in laying powers." Does this not mean that stock hives to be worked in the best manner want re-queening every year? Thus I reared a queen in '98, put her in my stock hive at end of July in that year. Now, as she was laying in '98 and '99, should I requeen at end of this present month or not till next year?—G. G., *Windlesham, Surrey.*

Reply.—We fear our correspondent is not quite accurate in his quotation from "Guide Book." On page 120 the words are:—"Young queens are, as farmers say, in 'full profit' the second *season*, and should not be kept longer unless their qualities are such as to make it desirable to perpetuate them." Now, if a queen is only breeding from the end of July in one year to end of same month in the year following, she cannot be said to have reared bees for two seasons, seeing that that period covers the time between April or May in one year to September in the year following. We should, therefore, in his case defer requeening till May, 1900.

METEOROLOGICAL

Observations taken at Duddington, Stamford, Northants, for the Week ending July 15, 1899.

1899.	Bar. in.	Tem. 9am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
July 9....	30·14	66·0	77	54	23	61·7	—
,, 10....	30·03	65·3	77	59	18	67·4	·05
,, 11....	29·95	68·0	83	61	22	71·2	—
,, 12....	29·80	78·5	81	61	20	70·3	—
,, 13....	29·90	62·0	72	57	15	61·0	—
,, 14....	30·01	61·2	77	48	29	61·5	—
,, 15....	30·12	65·0	72	52	20	61·3	—
Means	30 00	66·6	77·0	56 0	21 0	65·8	·05*

* Total, ·05 in.

Mean vapour tension, 0·452 in.; mean relative humidity, 70 per cent.; mean temp. of the dew point, 55°·9. The rainfall, viz., ·05 in., =1,131·15 gallons, or 5·05 tons to the acre, or 4 oz. to the square foot. For the week ending July 8, the mean temp., viz., 60°·7, was +0°·4, and the rainfall, viz., ·20 in., −·28 in. The rainfall for April 2 to July 8, viz., 5·66 in., is −·65 in.; and January 1 to July 8, viz., 10·61 in., −·81 in.

Fred. Coventry.

Duddington, Stamford, July 17.

Echoes from the Hives.

East Yorkshire, July 11.—The bees have been having a grand time lately, white clover in splendid condition. A farmer told me that since he had taken the sheep off to rest the clover, it was all coming up as fresh as ever; thunder showers have helped to keep it going, and if the weather keeps fine for the heather, it ought to be a good season. Swarms have been scarce; even my Carniolans have not swarmed, but one hybrid stock threw off a grand swarm, which was returned; all the brood, except two frames, being first removed. Stocks that were weak, even in June, have pulled up wonderfully, and are in the supers. One stock I was on the point of uniting, but did not as the queen was a grand one to look at, is now doing good work in a super. There is one field of fifty acres of white clover within a mile of me.—Alpha, *Hull.*

Chichester, July 14.—I fear we shall only have a very moderate honey yield for 1899. The dry weather we had following on a cold spring being, no doubt, the cause of our short surplus up to date. The late showers, however, have improved the prospect somewhat. Second crop of clover blossom is looking well, and the limes are in full bloom, so that we may look for a little surplus where bees have not filled top of brood nest with honey in the early part of June. I find the most backward colonies in spring are in the best heart for working at the present time.—The "D" Apiary.

Bee Shows to Come.

July 21 and 22, at Knowle.—The annual exhibition of the Bristol, Somersetshire, and South Gloucestershire B.K.A. will be held in connection with the local Horticultural Society's show. Schedules from Miss H. Dawe, Long Ashton, near Bristol.

July 22, in the Home Park, Windsor.—Show of Honey and Bee Appliances, Berks B.K.A. (Windsor District), in conjunction with the Prince Consort's Association.

July 26 and 27 at Wolverhampton.—Annual Bee and Honey Show of the Staffs. B.K.A. in connection with the Staffordshire Agricultural Society's Show. Open classes for Sections, Extracted Honey, and Bee Appliances. **Entries closed.**

July 27 at Cambridge.—Honey Show in connection with the Cambs. and Isle of Ely Agricultural Society. Open class for single 1-lb. jar of honey. Schedules from C. N. White, St. Neots.

August 2 at Henbury, near Bristol.—The Henbury District B.K.A. show of honey, &c., in connection with the Horticultural Society's show. Open classes for six 1-lb. sections and six 1-lb. jars, extracted honey. Schedules from C. A. Newman, hon. sec., Henbury, near Bristol. **Entries close July 25.**

August 2. In Neston Park, Neston, Wilts.—Honey Show in connection with the Atworth and District Horticultural Show. Seventeen Classes for Honey and Bees, including Single 1 lb. Jar and Single 1 lb. Section, with no Entry Fee. Schedules from J. P. Inkpen, Neston, Corsham. **Entries close July 26.**

August 3 at Loughton, Essex.—Honey Show in connection with the Loughton Horticultural Society Annual Exhibition. Four classes for honey open to County of Essex. Entry fee, 6d. Schedules from C. E.

Skinner, Hon. Secretary, Loughton. **Entries close July 29.**

August 3, 4, 5, and 7, at Liverpool.—Bee and Honey Show in connection with the Royal Lancashire Agricultural Society. Special Classes and Liberal Prizes for Honey, &c. Lectures and demonstrations with live bees in Bee Tent.

August 5 at Helsby, Cheshire (in connection with the annual flower show.) Open classes for extracted honey and bees-wax. Schedules from Dr. Briant, secretary, Helsby, Warrington. **Entries close July 31.**

August 7 at Beddington Park, near Croydon.—Surrey B.K.A. Annual Show, in connection with the Beddington, Carshalton, and Wallington Horticultural Society. Increased prizes. Five Open Classes, including single 1-lb. jar and section, with free entry. Schedules from F. B. White, Hon. Sec., Marden House, Redhill. **Entries close July 30.**

August 7, at Melton Constable Park.—Annual Honey Show of the North Norfolk B.K.A. Three open classes, including one for single 1-lb. jar of honey. Schedules from Hon. Sec., C. J. Cooke, Edgefield, Melton Constable. **Entries close July 28.**

August 7 and 8, at Delapre Park, Northants.—Northants B.K.A. Honey Show in connection with the Horticultural Exhibition. Three open classes with special prizes, including one for single 1-lb. jar of honey (entry free), six prizes, first prize, 20s. Schedules from Robt. Hefford, Hon. Sec., Kingsthorpe, Northants. **Entries close August 1.**

August 9, at Marlow, Bucks.—Annual Show in connection with the Marlow Horticultural Society, under the auspices of the Berks B.K.A Bees, Hives, and Appliances, Honey, &c. Eleven Open Classes. Liberal Prizes.—For schedules, apply to A. D. Cripps, Hon. Sec., High-street, Marlow. **Entries close August 5.**

August 16 and 17 in St. John's Schoolroom, Blackpool.—Annual Show of the Blackpool and Fylde Horticultural Society. Exhibition of honey under the auspices of the Lancs B.K.A. Open classes for twelve 1-lb. sections and twelve 1-lb. jars extracted honey, with prizes of 20s., 10s., and 5s. for each. Schedules from R. Atken, Sec., 17, Devonshire-road, Blackpool. **Entries close August 7.**

August 17, at Goole.—Bee and Honey Show in connection with the Goole and District Agricultural Society. Six open classes, including one for single 1-lb. jar (entry free). Schedules from J. Luddington and N. S. White, Secs., Lindum House, Goole. **Entries close August 12.**

August 18, at Exeter.—Devon B.K.A., Second Annual Show of Bees, Honey, Hives, and Appliances, in connection with that of the Devon and Exeter Horticultural Society. Ten open classes. Schedules from Mr. H. Tolson, Park House, St. Thomas, Exeter. **Entries close August 12.**

August 23 and 24, at Shrewsbury.—Shropshire B.K.A. annual Show in connection with the Shropshire Horticultural Society's great Fête and Exhibition. Open classes for hives, appliances, honey, &c. Schedules and entry forms from Mr. Jno. Palmer, 17, Brand-lane, Ludlow. **Entries close August 14.**

August 25 and 26, at Dunfermline, N.B.—Bee and Honey Show, West of Fife and District B.K.A., in connection with the Horticultural Society. Schedules from Geo. Weston, Sec., Grant's Bank, Dunfermline. **Entries close August 22.**

August 29 at Northwich.—Cheshire B.K.A. Show, in connection with the Cheshire Agricultural Society. Open classes for honey, wax, and single hives. Schedules from Mr. T. A. Beckett, St. Werburgh's Chambers, Chester. **Entries close August 8; at double fees August 15.**

August 30 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 23.**

August 31, at Abergwili.—Honey Show in connection with the Horticultural Exhibition. Open classes for single 1-lb. jar; prizes, 10s., 7s. 6d., 5s., 2s. 6d. And single 1-lb. section; prizes, 7s. 6d., 5s., 2s. 6d. No entry fee. Schedules from J. Jones, 3, Gifre-gardens, Abergwili. **Entries close August 26.**

September 6 and 7 at Birkenhead.—Cheshire B.K.A. Show, in connection with the Wirral and Birkenhead Agricultural Society. Liberal prizes for hives, honey, &c. Eight classes, including one (free entry) for 1-lb. jar of honey with four prizes. Honey tent in good position in show yard. Bee lectures and demonstrations. Schedules from Mr. Edwardson, 6, Hamilton-square, Birkenhead. **Entries close August 23.**

September 13 and 14 at Derby.—Eighteenth annual show of the D.B.K.A., in connection with that of the Derbyshire Agricultural Society. Eight open classes, including two with free entry for 1-lb section and 1-lb. jar of honey. Schedules from F. Walker, hon. sec. D.B.K.A., 64, Gerard-street, Derby. **Entries close August 31.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

G. T. Jarman.—*Transferring Combs Built Across Frames.*—We are obliged for particulars of your plan of transferring under difficulties, and can readily understand its being a success in your hands. As a matter of fact, we have ourselves got through more than one similar task in very much the same manner, and have described it in print. But it could serve no good purpose such a plan to a novice in bee-keeping, hence the reply given to J. E. B. on page 227.

W. Russell-West (Northenden).—*Perforations in Queen Excluder—Drones in Supers.*—1. The advantage gained by perforations running *across* instead of parallel to top-bars, is because of increased bee-ways, and no stoppage between any two frames, as occurs when used the other way. 2. Drones, no matter how young, cannot pass through correctly-sized perforations, so they must have got into supers by some other means.

Lanco (Newton-le-Willows).—*Bees and Sugar Refiners.*—1. We should doubt the wisdom of keeping bees so close as half-a-mile from a sugar refinery. The strong smell emanating from bags of raw sugar, as imported, would, we think, be sure to attract bees and lead to mischief. 2. No doubt a sponge wet with carbolic acid and creosote, could be used in an ordinary smoker for fumigating, but we prefer smoke from burning material in quieting bees.

A. W. (Soham).—*Prices of Honey.*—The honey sent is very good in colour and consistency, the flavour is also good, but rather lacking in "character." We cannot appraise its wholesale value, except by saying that similar honey has been sold at 7d. per lb. in 28 lb. tins.

F. Gifford (South Ealing).—*Hornchurch, Essex, as a Bee-district.*—Our correspondent asks as to Hornchurch being suitable for keeping a few hives. Will any reader who knows the district kindly say what they think of it?

L. Norman (Sussex).—*Suspected Comb.*—Our correspondent will, we fear, go sadly wrong in his bee-work unless he refers to "Guide Book" mentioned on such questions as are put to us. To transfer bees and combs from skeps to frame-hives without first being able to distinguish between newly gathered pollen and foul brood is to invite

failure. If the removed frames of partly drawn-out comb are not already destroyed, pray replace them in the hive without delay. The substance which has alarmed you is fresh pollen, stored in cells opposite to those in which brood is being reared. The comb is in perfectly normal condition, and taking it away simply means—to the poor bees—doing all their work over again.

AMATEUR.—We had better have a small sample of comb containing dead brood—said to be "attacked by disease"—sent for examination before offering any advice as to treatment. Our correspondent (who must please send her name and address when writing, not for publication, but for reference) has evidently had no experience of foul brood, and may be wrong in her surmise.

H. M. TURNER (Oxon.).—*Netting for Bee-tent.* Full particulars regarding netting, and also hire of bee-tent, may be had from Mr. G. R. Shilson, tent maker, Custom House-quay, Dover.

J. E. B. (Brighouse).—The suspected comb contains nothing worse than newly-gathered pollen.

FRED WILKS (Hinchfield).—*Suspected Comb.*—Some further particulars are needed before we can account for some of the brood in comb sent not being capped over before it has reached the pupa stage. Nearly all the *capped* brood seems alive and is hatching out all right; but the uncapped brood has suffered in some way so as to cause death. It looks like a case of either over-dosing with some antiseptic or of asphyxiation.

R. D. CAMPBELL (Wadebridge).—*Queen-excluders.*—Nothing is used between super and stock hive except the queen-excluder. It is well to wrap surplus chambers warmly so conserve the heat, but to put a quilt with a hole cut in it over the excluder, as proposed, is needless and worse than useless.

W. COOPER (Ryde, I.W.).—*Queen-rearing.*—Although late to commence queen-rearing in mid-July, it is not too late if a start is made at once.

J. E. B. (Stockport).—*Transferring Bees.*—If it is proposed to put the alternative scheme into operation this year, there will be little chance of it succeeding; seeing that a swarm of current year—hived in skep and placed on top bars of a frame-hive—would be very unlikely to transfer their brood nest into the hive below this season.

W. COOPER (Ryde).—*Hybrid Bees.*—English queen-raisers, as a rule, prefer the Ligurian and black hybrid to crossing the former with a Carniolan drone.

S. J. COOPER (Leicester).—*Tits and Bees.*—Most bee-keepers regard the blue tit as a bee-destroyer, and our personal experience tends that way, but we cannot answer for the other tits named.

F. D. (Exeter).—1. *Dwindling Stock.*—The queen is evidently worthless, and, as most of the "pint of bees" left will be old, they are worthless also. 2. *Honey Ripeners.*—These are useful, but by no means essential if honey is ripe before removal from hive. 3. *Creosote.*—A little of this is usually added to a sponge steeped in strong carbolic acid solution and used in similar fashion to an ordinary bee-smoker.

W. M. C. (Twickenham).—The Hon. Sec. of the Surrey B.K.A. is Mr. F. B. White, Marden House, Redhill.

H. EDRIDGE (Lewisham).—*West Norwood as a Bee District.*—Not being acquainted with the locality named we are unable to speak of its adaptability for bee-keeping. Perhaps some reader better informed than ourselves will oblige with a line on the subject. If limes at Dulwich are within reach they would help a good deal.

J. W. S. (Surbiton).—The plan followed is quite correct, but there was no need for putting queen-excluder between skep and frame-hive. If drones are not yet releasod, prop up skep to allow them to fly.

A. J. G. (Malvern Link).—The Hon Sec. of the Worcester B.K.A., is C. H. Haynes, Esq., Hanley Castle.

AMATEUR (Falmouth).—*Honey Samples.*—Honey is good in colour and consistency. The flavour reminds us of charlock or wild mustard; is this so?

J. D. (Romford).—*Entomological.*—Moth sent is a fine specimen of the Puss Moth (*Dicranura vinula*). When flying at night it was probably attracted to the hive entrance by the smell of honey. It is quite harmless to the bees (F. W. L. S.).

W. J. B. (Lynn).—Insect is a specimen of the cockchafer (*Melolontha vulgaris*). The larva lives underground and feeds on the roots of plants; it takes three years to mature (F. W. L. S.).

S. S. (Dewsbury).—The bees look like Carniolans, possibly slightly crossed with Italians or blacks.

S. GRIPE (Cannock).—*Expert's Certificate and Membership of Association.*—For particulars regarding expert's certificate and membership of B.B.K.A., apply to the Secretary, Mr. E. H. Young, 12, Hanover-square, London. The Hon. Sec. of the Staffs B.K.A. is Mr. E. Crisp, 8, Jesson-street, Coventry.

AMATEUR (Totterdown). — *Heather on the Mendips.*—Our correspondent asks:—Can any of your readers kindly inform me as to heather being grown on the Mendips of right quality and in sufficient quantities to obtain surplus honey therefrom? And, if so, where is the best "pitch"?

ANXIOUS ONE (Essex) and P. C. (Preston, Hull).—In both cases comb is affected with foul brood. Judging by sample sent it seems to be a recent attack, but it is rapidly developing.

*** Several communications on "current prices for honey" have reached us and will receive attention in our next issue.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

WANTED, steady LAD or elderly MAN for odd jobs about house and garden. One having some knowledge of bees preferred. Moderate wage, with board and lodging. Address, A. R., *Bee Journal* Office. 308

WANTED, good ENGLISH HONEY in SECTIONS. State lowest cash price per gross. EXPERT, care of *B.B.J.* Office. 318

WANTED, SAINFOIN and CLOVER HONEY (extracted and sections). Send 2-oz. sample, to F. SLADEN, Ripple Court Apiary, Dover. 311

WANTED, FIVE to TEN TONS ENGLISH HONEY, second or third grade, for manufacturing purposes, in tins holding 40 or 50 lb. each. Price £45 per ton, carriage paid and packing free. JAMES SMITH, Palm Grove Nursery, Birkenhead. 317

HONEY LABELS with name and address, from 2s. 6d. for 250; 6s. 1,000. GUEST, King's Norton. 304

SPLENDID CLOVER SECTIONS FOR SALE. Apply, HY. WADDINGTON, Kirby Hill, Borobridge, Yorks. 306

FOR SALE, ½-ton finest quality HONEY, and 1,000 SECTIONS. Samples, 2d. H. MAY, Kingston, Tetsworth. 309

STRONG Three-Frame NUCLEI, with fertile 1899 Queen, 12s. 6d. WOODS, Normandy, Guildford. 319

CUMBERLAND, NEWARK, and GAYTON HIVES EXCHANGE for BEES or HONEY. Photograph sent. Dr. WALKER, Kirkby-Stephen. 313

FOR SALE, an APIARY, containing 15 stocks of healthy bees in nearly new hives, Blow's, Meadows', and Lee's make. GEARY, 6, Stanley-street, Barwell, Hinckley. 310

FOR SALE, excellent well-filled 1-lb. SECTIONS, good colour, 8s. per doz. Carriage paid on six doz., upwards. E. DAVIS, Great Bookham, Surrey. 312

FOR SALE, Three Frame HIVES of BEES, and Three Empty HIVES. Good supply of fixings; two hives full of honey in second stories. Particulars, apply H. WESTON, Wigston Magna, Leicester. 315

2,000 TELAMONIUS PLENUS; BACKHOUSE and PRINCESS MARY Mixed; 200 EMPEROR NARCISSUS. Offers in cash or honey, clear, to SHERRATT, Blackbrook, Anslow, Burton-on-Trent. 305

DRAWN OUT SECTIONS FOR MOORS. Can spare a few hundreds at the following prices:—One doz. 3s., two doz. 5s. 6d., post free; four doz. 10s., eight doz. 18s., carriage paid. Sample by post, 5d. All carefully and securely packed. The sections are 1-lb. four-way, quite new and unsoiled, and not mutilated by saw cut, and the comb is beautifully white, fully drawn out, and attached to wood all round without popholes. Bees perfectly healthy. J. M. BALMBRA, 2, East Parade, Alnwick, Northumberland. 307

BOVINGDON, HERTS.—TWENTY-FIVE ACRES of FREEHOLD LAND to be SOLD by AUCTION, by Mr. N. W. ROBINSON, in ten lots, at the RAILWAY HOTEL, Boxmoor, on THURSDAY, AUGUST 17th, 1899, at FIVE o'clock, by order of the Proprietor, Mr. T. Rickett. The Land is within about two miles of Boxmoor Railway Station, near the village of Bovingdon, and near the golf links. Suitable for villas, cottages, POULTRY FARMS, BEE FARMS, orchards, and gardens. Gas and water mains pass most of the lots. May be viewed at any time, and particulars, plans, and conditions of sale may be obtained at the Place of Sale; at the Offices of Messrs. GROVER & SMEATHMAN, the Vendor's Solicitors; and of the Auctioneer, 66, Marlowes, Hemel Hempstead.

CHOICE YOUNG QUEENS of the highest quality at low prices. Send for my circular. EDWARDS, "Beecroft," Ashford, Staines. 297

"W.B.C." HIVES.—Make your own at third the cost. For particulars, send stamped addressed envelope. PRIDEAUX, Whitchurch, Salop. 302

BRICE'S RELIABLE QUEENS. Well-known strain, one quality, one price. Mated tested Queen, 5s. 6d. Post free in perfected travelling and introducing cage. Safe arrival guaranteed. HENRY W. BRICE, 100, Brigstock-road, Thornton Heath.

Prepaid Advertisements (*Continued*).

FOR Delivery, 1st August, strong three-frame nuclei '99 tested QUEEN from grand strain, 15s. GUTHRIE, Expert, Doonfoot, Ayr. 296

PROLIFIC QUEENS. Nuclei and Swarms. Stocks—Skeps or Frame Hives. E. WOODHAM, Clavering, Newport, Essex. 286

SELECTED FERTILE ENGLISH QUEENS, 5s. 6d. each, post free, in travelling cage. JEMIESON & BAKER, Bee Specialists, Dringhouses, York. 314

ENGLISH MADE HONEY JARS (1-lb. screw-cap). 14s. per gross; sample, 6d. JAS. DYSON, Stainforth, Doncaster. F.N.

QUEENS, STOCKS, NUCLEI, and SWARMS. A few more orders can be accepted. List free. Rev. C. BRERETON, Pulborough, Sussex.

COMFORTABLE APARTMENTS for Brother Bee-keepers visiting Douglas. HORSLEY, Merridale House, Empire-terrace, Top of Castle Drive, Isle of Man. 183

FURTHER REDUCTIONS. TRANSPARENT CELLULOID QUILTS, post free, 1s. 6d.; CELLULOID QUEEN EXCLUDERS, post free, 1s. 6d. R. H. COLTMAN, Bee-Appliance Maker, Burton-on-Trent.

FINEST BEESWAX FOUNDATION, 1s. 9d. lb. brood. Special parcel: Six sheets Foundation and Queen Excluder, 2s. 6d., post paid. PARKES, Bee Expert, Oldbury. 288

LACE PAPER for GLAZING SECTIONS. 100 strips, 7d., 200, 1s. 2d., 300, 1s. 6d., 500, 2s. 3d., 1,000, 4s. Post free. Best quality. Neat Patterns. W. WOODLEY, Beedon, Newbury.

1899 LAYING QUEENS, reared from Stock possessing the most desirable qualities, 5s. two, 9s. Virgin Queens, 3s.; two, 5s. WM. LOVEDAY Hatfield Heath, Harlow, Essex.

2/2.—BEE GLOVES, as recommended by the great bee authority the Rev. W. E. Burkitt, 2s. 2d. per pair, post paid. Special terms for wholesale buyers. Manufactured by EDWARD REYNOLDS, Glove and Gaiter Manufacturer, Andover. 257

QUEENS, raised on scientific principles and under best conditions. Prices: Virgins, 2s.; Fertile, July, 4s. Booked in July for delivery end August and September, 3s. 6d.; otherwise 3s. 9d. Reduction for quantity. Satisfaction and safe arrival guaranteed. Cash with order. TAYLOR, Grasmere, Ilminster. 291

RABBITS, Lop-ear, one of the best strains, ears growing up to 26 inches. Outdoor reared. Very hardy. Bucks, fawn or grey, 3 months old, 3s. each; bucks, fawn, or fawn and white, 2 months old, 2s. each; 2 for 3s. 6d. Leeks, strong plants for present planting, 100, 6d. Postage free. WM. LOVEDAY, Hatfield Heath, Harlow, Essex.

PURE IMPORTED ITALIAN QUEENS, 5s. each.
" " CARNIOLAN QUEENS, 6s. each.
ENGLISH QUEENS (best quality), 5s. each.
Safe arrival guaranteed in self-introducing Cages.
Cash with order.
HOWES, MELTON HOUSE, KNOWLE, BRISTOL.

A FURTHER IMPROVEMENT IN "WEED" FOUNDATION.

THE THIN BASE.

Mr. WEED, after repeated experiments with bees and foundation, has invented a foundation with base as thin as that in the natural comb, and with high and thick side walls.

Its advantages are: No more fish-bone in super foundation; immediate commencement of honey storage; and wax in side walls to thin and draw out the cells.

The sheets of super are about $\frac{3}{16}$ of an inch in thickness, and run 15 square sheets to the lb.

The Messrs. A. I. ROOT CO. are desirous of securing an expression of British opinion before placing it on the market for next season.

It is for sale in small quantities at both London and Liverpool. For small free samples, apply to

W. BOXWELL,
PATRICKSWELL, Co. LIMERICK.

Editorial, Notices, &c.

THE SEASON'S HONEY CROP.

CURRENT PRICES FOR HONEY.

The several communications which have reached us, since our brief allusion to current prices for honey all tend in the same direction as those quoted on page 279 last week. They serve but to emphasise the divergence of opinion there pointed out, and to further illustrate the advisability of allowing present arrangements to continue in force for some time at least, because it seems to us impossible to devise a scheme that would suit all parties. In support of this contention we would ask, Who can either regulate supply and demand, or assess the value of bees, honey, or labour? In some parts of the country swarms of bees may be had for six or seven shillings or less, simply because there is no demand for them; while in other places ten to fifteen shillings is readily obtainable for a good swarm. The same with honey. We hear from one correspondent of "another parson" who is "selling capital sections at 7s. 6d. per dozen, carriage paid." But these come from a county where money is none too plentiful and labour is cheap.

On this last point, one letter received is worth quoting. It is dated from Lynn, Norfolk, and the writer says: "Regarding the advocacy of a general 'current price' for honey, it may be easy enough for a trades union to exact the minimum wage for its members, but were all bee-keepers united it would be almost impossible, and certainly unfair, to have a standard price for honey. The price of all commodities bears some ratio to the price of labour, or the wages earned. Where I lived for many years, the labourer's wage was 18s. weekly; the same class of labour is here obtained for 12s. This means that living, rent, &c., are proportionately cheaper, for the 12s. here equals the 18s. there. In other words, it is the smallest amount upon which the labourer will or can live. It is obvious, then, that if I sell my honey at 8d. per lb., the bee-keeper near London must obtain 1s. to secure an equal return to mine. His rent is higher than mine, and his wages bill is larger for the same amount of labour."

It is not easy to controvert the simple logic conveyed in the above, but we go further, and say there is no present need for doing anything likely to accelerate the "down-grade" in prices of which some complain, as it undoubtedly would, to give prominence to minimum rates in our pages every week. Indeed, we are at a loss to understand why any of our large honey-producers should think it will be to their advantage to do so. It could only tend to disturb existing arrangements between the producer and retailer—arrangements which may have been satisfactory to both for years past.

We have but to bear in mind that the bulk of those who now produce honey on a fairly large scale have "made a market" for themselves by the adoption of sound business principles in their dealings with customers.

What we would like readers to aim at is careful grading, to ensure uniformly good quality in the honey sold for table use, and using every effort to put their produce on the market in the best possible form. In saying this we take no account whatever of what may be called low grade British honey, because those referred to above as having made a market for themselves will no doubt possess sufficient common-sense to sell such honey to those who require the product for manufacturing purposes only, and let it go for whatever it will fetch. If these "business principles" are steadily kept in view, and the fact of our short and precarious honey season is taken into account, such prices as were mentioned last week are, in our opinion, yet a long way off.

YORKSHIRE AGRICULTURAL SOCIETY.

SHOW AT HULL.

The sixty-second annual meeting of this Society was held at Hull on the 19th, 20th, and 21st inst., and may be pronounced (so far as bee-keeping is concerned) a splendid success, for it was a record in all classes, there being a total of eighty-three entries. The authorities allotted to our craft a fine shed and staging 105 ft. long by 24 ft. broad, besides allowing to the East Riding Branch B.K.A. a special shed 20 ft. by 10 ft, in which they made a creditable display of about a ton of honey, amongst which mention should be made of a splendid Lee's "Crystal Palace super" containing about 30 lb. of fine thick comb, exhibited by the Rev. R. M. Lamb, Burton Pidsea.

The *Collection* class drew three entries, one

(Mr. R. H. Coltman, of Burton-on-Trent) new to the North of England shows. In Mr. Jemeison's exhibit we noticed a useful bar-frame hive with a straw-sided body-box; in such a hive we have found bees winter in a better fashion than within ordinary wooden walls. Mr. Giddy, of Welton, Brough, near Hull, in his trophy, showed us that some modern bee-keepers, even now, have a corner in their apiaries (and hearts) for skeps, by exhibiting a straw super filled with exquisite virginal comb honey. Altogether the bee department was a *tout ensemble*—trophies, collections, sections, extracted honey, &c.—of which one felt proud, seeing in it, as it were, the results of many years of quiet slogging work on the part of the Yorkshire Bee-keepers' Association and its affiliated branches.

The bee tent was, as usual, on the ground, and Mr. Frank A. Pay, Donnington, York, as lecturer, drew intensely interested crowds, who testified to the usefulness of "Tent Work."

On the second day of the show a conference of the Yorkshire and Branch B.K.A. was held under the chairmanship of the Rev. R. M. Lamb, and an important resolution, *inter alia*, was passed, "That the annual meeting of the Y.B.K.A. be held on the second day of the Yorkshire Show at the town where it is held." This will have the admirable result of bringing bee-keepers together with the usual friendly "barging" and the well rounded-off termination.

The judging was undertaken by Mr. R. A. H. Grimshaw, whose awards were as follows:—

Collection of Hives and Appliances.—1st, W. Dixon, Leeds; 2nd, Jemeison & Baker, Dringhouses, York; 3rd, R. H. Coltman, Burton-on-Trent.

Complete Frame Hive.—1st, W. Dixon; 2nd, W. Dixon.

Observatory Hive, with Queen and Bees.—1st, W. Dixon; 2nd, W. Dixon.

Honey Trophy.—1st, W. Dixon; 2nd, Wm. Smith, Preston, Hull; 3rd, Miss S. J. Cooper, St. Nicholas-square, Leicester.

Twelve 1-lb. Sections.—1st, W. Patchett, Caistor, Lincs.; 2nd, H. Waddington, Boroughbridge; h.c., Mrs. Dreaper, Grosmont Junction, Yorks.

Twelve 1-lb Jars Extracted Honey.—1st, W. Dixon; 2nd, Miss Cooper; v.h.c., Rev. R. M. Lamb; h.c., J. P. W. Lightfoot, Pickering.

Bees-wax.—1st, Mrs. Elizabeth Berry, Llanrwst, N.W.; 2nd, Rev. Sidney Smith, Wheldrake Rectory, York.—(*Communicated*).

NOTTINGHAMSHIRE B.K.A.

SHOW AT SOUTHWELL.

The annual show of bees and honey in connection with the Southwell Horticultural and Cottage Gardening Society was held on Thursday, July 20, and may be regarded as most successful.

Mr. P. Scattergood officiated as judge and made the following awards:—

Shallow Frame of Comb Honey.—1st, G. H. Pepper, Winkburn Hall; 2nd, H. Merryweather, Southwell; 3rd, W. Lee, Southwell.

Six 1-lb. Sections.—1st, H. Merryweather; 2nd, J. T. Faulconbridge, Bulwell Wood.

Six 1-lb. Jars Granulated Honey.—1st, J. Herrod, Sutton-on-Trent; 2nd, J. T. Faulconbridge; 3rd, G. Smith, Bradmore.

Six 1-lb. Jars Extracted Honey.—1st, J. Herrod; 2nd, J. T. Faulconbridge; 3rd, Geo. Bell, Cottam; 4th, W. Lee.

Observatory Hive, with Bees and Queen.—1st, Hy. Merryweather; 2nd, Geo. Marshall, Norwell.

Six 1-lb. Jars Extracted Honey (non-winners at previous shows only).—1st, J. Breward, Staythorpe; 2nd, G. H. Pepper.—*Communicated.*

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

COMB HONEY PRODUCTION.

WORKING SECTIONS BELOW SHALLOW FRAMES.

[3742.] I wrote my former letter (3,733, p. 271) without having the issues of the B.B.J. in front of me, and, through careless reading, I suppose, was under the impression that our editors had endorsed Mrs. Barber's remarks on this subject; but on referring back I find that, without advocating this method, you merely endorsed Mrs. Barber's views as to bees doing more work in frame supers than in sections. I therefore regret having made mention of "recent articles on this subject."

I thank you very much for footnote to my letter, but, with a number of catalogues in front of me, I got the impression that many of our makers mention and show a "lift" with moveable dummies or inner walls, which make it convertible into a shallow-frame box, but which an ordinary rack of sections cannot be worked without altering the shallow-frame lift by stopping bee egress. So much for theory; in practice I am now actually working on a hive by a well-known maker a rack of sections *under* such a "lift," but have had to nail thin pieces of wood along under the lift to keep the bees in, the section rack in this case being an ordinary four-way rack, and *smaller each way* than the s.f. lift. May I ask. 1. If you were going to work a section rack under shallow frames, would you have done the same? or, if not, what would you advise? 2. Have you tried Mrs. Barber's method? For myself, I don't think much of it; but, being only a young bee-keeper, my opinion is almost valueless—and, as before stated, I do not experience any difficulty in

getting bees to enter sections. 3. With reference to that portion of your footnote about working sections *over* frames, I have never yet seen a hive in which this could not be done, and I think you must have slightly misunderstood my letter when you say, "all reliable hive makers provide fully against such contingencies . . . so far as section racks fitting properly *above* shallow frames." My request for your opinion was as to working *under* such frames, and my objection was based on actual experience; I did not mention any objection to working section racks over shallow frames; to do so would, of course, be ridiculous.

Referring to glass-sided supers, mentioned in "Editorial" on page 209, I have three of "Lee's Crystal Palace Supers" on my hives, and find that the bees are building their combs right up to the glass sides of supers, and after filling the cells with honey, are sealing them over. Now in order to sell single combs of this lot of surplus I shall have to get them away from the glass, and (never having worked bell glasses or glass-sided supers before) I therefore ask:—Can bees make the wax so adhere to glass as to make it necessary to use a knife in parting the comb therefrom? I put the question because it seems to me most important that these combs should be sold without a broken or an unsealed cell for honey to drain from, and this does not seem possible if the combs have to be cut away.—E. P. G, *Broadwater, Worthing.*

[1. If we saw any reason for setting a section rack below a bar of shallow frames, no doubt we would have taken whatever steps were necessary under the circumstances; but the superficial dimensions of a shallow-frame box, as used in this country, being the same as that of a hive body-box holding an equal number of frames, it becomes obvious that an ordinary rack made to take twenty-one 1 lb. sections was never intended to be placed under such a box. Nor do we think there exists any real need for such alterations as would make the two appliances interchangeable. 2. No; nor do we suppose we ever shall try Mrs. Barber's method. Moreover, our correspondent must forgive us for saying that there is no reason for *his* trying it. In other words, the lady referred to devised her plan in order to overcome the difficulty she experienced in getting bees to work in sections; but our correspondent says: "I have no difficulty in inducing bees to enter sections." Why, then, take any trouble in the matter? 3. The "contingencies" we had in mind when writing on page 271 had reference to the "lifts" with movable sides for converting into a box to hold shallow frames. For the rest we may add that the whole of our remarks in B.J. of May 25, as stated on page 199, had reference to "the principle involved in the admitted advantage gained, so far as weight of surplus, is nothing more than the known fact that a body of bees (say, 1,000) working in on continuous cluster will generate heat much more readily than the same number divided off into a score of small clusters each occupying a separate little chamber of its own, as when comb-building in a 1 lb. section." A careful perusal of the context will, we think, make this plain to our correspondent.—Eds].

INSECTS AND FLOWERS.

[3743] I was much interested in Mr. Hamlyn-Harris's article on "Insects and Flowers" (page 219). The relationship of insects and flowers is a beautiful and fascinating study, and deeply interesting from more points than one.

I notice that Mr. H.-H. deals with the subject of bees and flowers principally from the colour standpoint; and hardly hints at that quality of flowers which, to my mind, has infinitely more attraction for the bee, that is, "their fragrance."

It will be admitted that there is quite as great variety in the fragrance of flowers as in their colours, or diversity in their forms; and my own limited observations leads me to believe that the visits of the hive-bee are determined more by the fragrance of a flower and the aroma of its nectar than by the mere colour. On Sunday, June 3, while strolling in our beautiful glen, I enjoyed a good opportunity of studying some of the habits of bees, both wild and domesticated. One thing which struck me very forcibly was the great difference in the choice of flowers displayed by the hive-bee as compared with the Bombi. A hedge of hawthorn in bloom was literally "swarming with hive-bees." A goodly number of the Bombi variety were also busily engaged on the same blossoms. Further on I came to several sycamore trees, with their wealth of pendant blooms, and here again the *Apis mellifica* were busy carrying off the nectar, as were the Bombi. Close by was a horse-chestnut with its spikes of stately strong-scented blossoms, which the Bombi seemed to regard as a veritable "Klondyke," whilst the hive bee evidently avoided these flowers altogether.

On a bank hard by—and filling the air with their perfume—nodded countless wild hyacinths, and dozens of Bombi pillaged these blooms, but not a hive bee was to be seen, although I should think the latter outnumbers the former in the neighbourhood by a hundred to one. What arrested my attention again and again was what I might term the "cosmopolitan sense of taste" evinced by the Bombi contrasted with the delicate sauciness of the hive-bee. There were many varieties of flowers, and while the Bombi seemed equally to patronise every kind, the hive-bee confined her attention almost exclusively to the sycamore and hawthorn. I have also noticed that in the garden the hive-bee seldom, if ever, visits the rhododendron, foxglove, monk's-hood, lilac, or even fuschia, whilst the Bombi visits them indiscriminately. I have, therefore—rightly or wrongly—come to the conclusion that the hive-bee—fortunately, perhaps, for the bee-keeper—possesses a very delicate sense of taste, and when honey from

other sources is available, will not gather honey from flowers the nectar of which has a strong smell or pungent flavour. In support of this argument let me say, within half-a-mile of my apiary a good quantity of bell-heather grows. This comes into flower in June and continues in bloom until September.

Now, in the year 1897 the great bulk of my honey was very light coloured; and I may safely say that not one-tenth of it was gathered from heather, although there was a sufficient quantity in the vicinity to keep most of my bees employed. I have often watched to find hive-bees working on the heather at a certain time of the season, and could not find one, whilst at the same time, and right amongst the heather, the greenish-white, insignificant-looking flowers of the wild sage were visited constantly by thousands of them. But when the clover, sage, and kindred flowers cease yielding honey, then the bees will store the heather honey at a wonderful rate.

I am not at all sure that bees have any aversion to green or yellow flowers, as instance the bloom of gooseberry and sycamore, of which they are very fond, and in the early spring in our locality you may see a bee on almost every dandelion, immensely enjoying his pollen bath.

If hive-bees, as Mr. H. H. seems to assert, have any predilection for blue and violet, surely the wild hyacinth and purple heather should attract them? Notwithstanding this, however, I find that when certain other flowers, not having the advantage of such showy petals, are plentiful, then these first-named flowers are quite neglected.—LANCELOT QUAYLE, *Glenmay, Isle of Man, July* 10.

MORE CARNIOLAN EXPERIENCES.

[3744] Referring to my allusion to non-swarming on page 285 last week, I think my bees must have read what I wrote and determined to disprove it, as since then they have been swarming vigorously. The first to open the season was a hybrid stock—pure Carniolan queen crossed with black drone. They threw a grand swarm, leaving an unfinished shallow-frame super. I tried the "Simmins" plan of "swarming without increase," *i.e.*, removed all brood except two combs, filling up with foundation, placing the swarm in the empty hive—except for the two combs—and putting the remainder of the queenless brood elsewhere. The next thing that happened was that the queen mysteriously disappeared. I never could trace her. Mr. Simmins says "the queenless half will be too much weakened to swarm." No doubt that would be true with ordinary bees, but Carniolans are *extraordinary* bees. On the ninth day they swarmed again, but returned to the hive; and, on finding a virgin queen at large, I destroyed the remaining royal cells. That settled them. Next a pure Carniolan stock swarmed. They were working in twenty-two standard frames, and had eleven more empty frames fitted with starters below and most ample ventilation; but, all the same, they swarmed! I hived the swarm on eleven of the frames; that queen also disappeared! It is inconceivable both could have been killed in hiving. Did the bees kill them? The next was a hybrid Carniolan stock. They were caught by a "Brice's swarm-retainer," but as all the bees re-entered the hive I could not take the swarm. This happened three days running; but when they had settled down the third time, I opened the hive and made a nucleus with the queen—one frame of brood, one of honey, and one of foundation, and some bees shaken off another comb. Will it be believed that nucleus swarmed the next day? Some bees from the hive must have joined, I think; however, I returned the swarm to the nucleus. Next day they swarmed again! I was away, and they spent the night in a hawthorn bush, and I hived them next morning; I caught the queen as the bees ran in and caged her. I should also say I found two royal cells just started in the nucleus, but they were not there the day before. I think the cold night in the bush has cured them, the cold air having reduced the fever—acting like a "wet sheet pack," in fact.

I said I would have no more Carniolans, but I have a pure queen still. I may perhaps try an electric fan to keep them cool! No doubt the queens are immensely prolific, and work is still going on in the supers of the three stocks; one has a double set of shallow-frames, but swarming has spoiled their output of honey. My best stock just now is a Ligurian crossed Carniolan, which has above its brood-box of ten frames, two boxes of shallow-frames and a rack of sections, all full of bees, and they are building comb in a "Meadows" non-swarming chamber below brood-box about equal to thirty standard frames, The other stock is scarcely inferior. —ALPHA, *Hull.*

(*Correspondence continued on page* 294.)

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

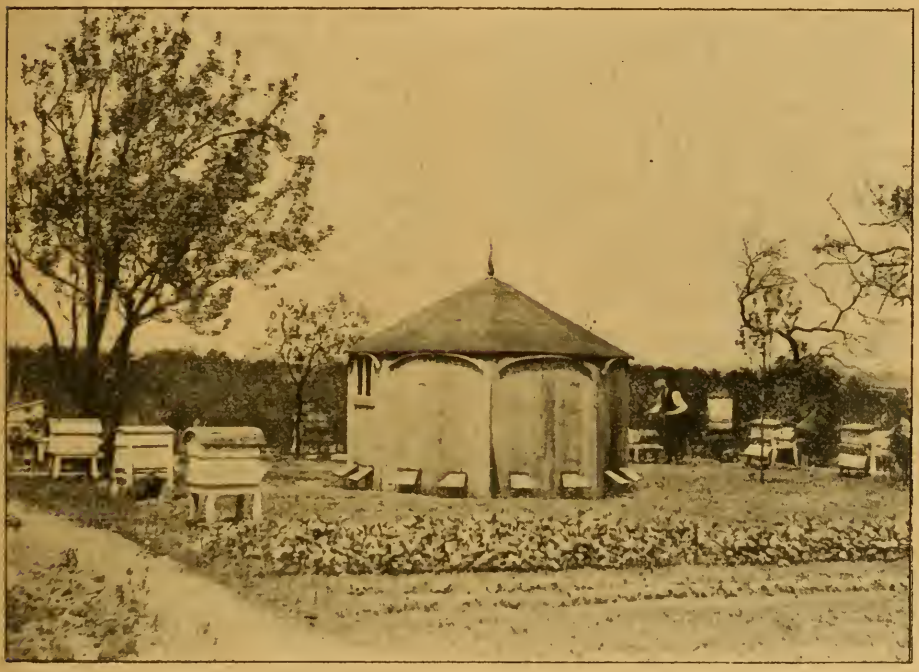
Mr. Anderton, though himself a practical working farmer, belongs to a class of agriculturists not often met with. He can not only steer a plough, but make a capital bee-hive, as will be admitted when we say that all the hives—together with the neat little bee-house—seen in the photo on opposite page are the work of his own hands. Having known him for many years past, we have often wondered that his keen enthusiasm for the craft did not carry him, bees and all, to a better district for honey-gathering. Mr. Anderton was for some time hon. sec. of the Lancashire and Cheshire B.K.A., and did a great deal of practical bee-work for the association in assisting members during the time, until business necessitated his relinquishing the office.

Asked for a few lines to go with the bee-garden picture, he writes :—

"My apiary is now not so large as formerly. I used to keep between thirty and forty stocks, when I could get plenty of bees driven, but this can't be done now. The bee-house seen in photo. is in the form of a hexagon, eight-sided, and is made to take a double-queened hive on seven of the sides, the eighth being for the door. Each hive, as shown, has two flight-boards, so that they may be called fourteeu stocks in seven hives. The house as well as all the frame-hives seen are the work of my own hands, for, although a farmer, I do a bit of joinery. I have also twelve hives outside in the garden besides four skeps. My bees and self unfortunately live right "in the teeth of the wind," as it were. I cannot keep up to full strength. The bees winter very well. I seldom lose a stock; but when the spring opens the poor bees are blown away by hundreds. After doing my best to screen them, it avails little, for my children pick them up by the pint scattered about in all directions; to such an extent do they suffer that I seldom get more than one-third of the stocks strong in time for supers.

"I keep a few skeps not only to supply swarms but to reinforce my best frame-hives with young bees, being so very handy to lift about. When the youngsters are going for a fly I carry the skep over to the frame-hive, and by that means get a lot of young bees which the frame-hives assist to full strength. I do not like mixing frames for this purpose. I generally get a little honey each season; in 1897 my best hive (a double-queen one) gave me 140 lb. of surplus, others 60 lb. and upwards. Last year I did not take any surplus, a thing which has not occurred before since '88. From August 10 to 15 last year it was wonderful to see what an amount of stores the bees gathered, and it came most opportunely so far as saving sugar is concerned, for the hives were almost bare of food.

"All my honey is sold privately at our old-fashioned price of 1s. 3d. per lb., and I seldom have a pound left on my hands.



MR. R. F. ANDERTON'S APIARY, STONE BRIDGE, WEST DERBY.

"I know you want to see that I am still keeping a few skeps; but I must have a swarm or two, and well knowing the value of a good strong frame-hive, I take care they never swarm. The bee-driving expeditions of past years are now dead and gone, as are most of the people who used to keep bees in skeps. I am still ferreted out by amateurs and carried off on "helping" jobs, but as I now make them work under my directions they have no need of help. I have now been keeping bees for twenty-seven years, and am thankful to say have not had foul brood in the whole time."

It speaks volumes for Mr. Anderton's skill to read of freedom from foul brood for all those years. Would that more were like him.

CORRESPONDENCE.

(*Continued from page* 292.)

INSECTS AND FLOWERS.

[3745.] If anything were required to justify my remarks last week as to critics understanding what they criticised, surely it may be found in the statement of your correspondent "Coney Berry," on page 281. And I need only ask your correspondent to again read the letter in question; she will then find more than an answer to her statements.

Referring to the letter of "Beecroft" (3734, p. 271) on "Bees and Valerian" a reply to his query will be found in B.B.J. for October 1, 1896.

As to the spur valerian (centranthus ruber) I am almost certain that it is *not* worked by our honey bees, as the corolla is a very long one, and further observation has shown me that while bees worked the white variety known as valeriania officinalis L., not a single bee was to be found on the "red spar," although both were planted within a few yards of one another, the corolla of the white valerian is infinitely shorter.—R. HAMLYN-HARRIS, F.Z.S., F.E.S., &c., *Villa Rominger, Tübingen, Würth, Germany.*

SWARMS AND SURPLUS ROOM.

CRITICISING EDITORIAL REPLIES.

[3746.] You deprecate, and rightly deprecate, criticism of the replies given to correspondents when the critic has no means of knowing what the correspondents' queries actually are. In regard, however, to your reply to M. Hider on page 277 in last issue, it is not necessary to know what the correspondent's queries were before venturing to dissent from the advice given. My experience is very limited compared with that of our Editors'; nevertheless I should advise, if the swarm were a large one, and plenty of honey about, that a super should be given on the day of hiving. To show the advantage of pursuing this method, allow me to give the history of a swarm which I hived on the 5th inst. This swarm (indeed, it was a combination of two swarms) weighed, probably, not less than 10 lb. The bees were hived on eight frames fitted with foundation, and a super of shallow-frames also fitted with foundation was immediately given. I found on the next day that the bees still had too little room, and so gave them another super. To-day (July 15) both supers are practically full of honey. To have restricted the bees to the brood-chambers for even a day or two would have been to entail a certain loss of honey, and possibly a breakdown of foundation.—J. M., *Pontypridd, Glam., July* 15.

[Our objection to irresponsible criticism, with reference to replies in the particular column mentioned, obviously rests on the critic's want of knowledge regarding the questions put. But it goes beyond this, being largely based on the said critic's absolute lack of the peculiar experience, which is only gained in an editor's room. With some thousands of readers to reckon with, and not a few scores of wide-awake practical bee-men quick enough to detect a flaw in what is supposed to be "sound" advice, we venture to say the—shall we call it amended?—reply is a long way more open to adverse comment than the one given to M. Hider on page 277. Indeed, the "case," quoted by "J. M.," is so exceptional as to have almost no bearing on the point dealt with by ourselves; seeing that a couple of swarms weighing 10 lb. when self-united, hived just when the weather changed so suddenly for the better, and honey began to come in fast, formed a combination of favourable conditions so rarely met with as is not worth taking into account. We are sincerely pleased to hear of the complete success attending the plan followed by our correspondent; but all the same, we venture to adhere to the soundness of our reply, and don't advise our friend to try his plan again under ordinary circumstances, for the chances are a great many to one that it would fail.—EDS.]

A DEALER'S GRIEVANCE.

[3747.] Evidently the addition of the word dealer to a person's name is responsible for a good deal. A person with this appendage to his name is by many looked upon as being able to take a downward step to suit an occasion. But I am thinking now of the bee-keeper's "dealer," who, rightly or wrongly, is made responsible for too much, and my wish is to show that the dealer is sometimes the victim of circumstances.

A parcel of goods ordered this spring of one of our foremost and most reliable dealers is not yet delivered to me. These the dealer cannot make himself, but he has proved to me that he ordered a quantity of these particular indispensables in November, 1898, for delivery in the spring of '99. Under the pressure of annoyance and some loss, I have written the dealer several times, and he has, I know, expressed himself strongly to the manufacturers.

We are now informed that there is no prospect of the order, of which my little requirement was part, being executed for some time. These goods have been ordered eight months, and I saw the acknowledgment of cheque in payment.

Though a victim myself, I think it only fair to state in print the dealer's side of the case, which has been proved to my own satisfaction.—W. LOVEDAY, *Hatfield Heath, Harlow, Essex, July* 17.

Queries and Replies.

[2243.] *Removing Surplus under Difficulties.*—Two years ago a strong swarm, hived in a skep, was placed on an inverted box by way of a stand. This box had a hole in it, through which hole the bees worked downwards and built combs inside the box. When discovered last autumn, we raised the box on to a proper stand, and the bees wintered well. Last May we took off the skep and placed it close to the box—raised the box and placed it over a large frame hive, fitted with comb-foundation, and cemented the cracks so that the bees were forced to use the proper doorway of the frame-hive. They have worked well this summer, and I feel sure that the box is full of honey as well as the hive; but how are we to get the box off without making a terrible disturbance? Unfortunately, when setting the box above the hive we never thought to put a quilt with hole in it between, so as to leave a small space for the bees to work down through. As it is, I fear the combs in the box are fixed firmly to the frames below, and there is no way of applying a carbolic cloth, while I am sure that smoking will not be enough to quiet the bees. Is chloroform ever used nowadays? and, if so, can you tell me the way to apply it without injuring the bees? I suppose August would be the best time to take the box? As it stands now it is a most untidy object, and a reproach to—A Nervous Lady Bee-keeper, *Enniscorthy, Ireland.*

Reply.—First, let us say "chloroforming" is too risky an operation for an inexperienced bee-keeper. The *nom de plume* adopted by our correspondent leads us to advise that she obtains some help before removing the upper box from hive. It would be quite a simple operation for a man possessing a little practical experience of bee-work, but for a "nervous" lady, all sorts of unpleasant things might happen if the operation was not managed properly. No indication is given as to size of box, which might weigh a half hundredweight or more if full of honey. The *modus operandi*, however, is as follows: With a screwdriver gently raise the box at one corner the least bit to allow of a very thin wedge of wood being slipped between hive and box. Do this at all four corners just high enough to permit of a wire being pulled slowly through—as when cutting firkin butter. This will cut through and separate any combs that may be attached to top-bars of frame-hive. When the wire has been drawn right across push the wedges further in, so as to raise the box about ⅛ in. (not high enough to allow of bees escaping) and puff in a little smoke at the junction. Suspend operations for about fifteen minutes while the bees are licking up the honey from the several combs. Then give some more smoke as before, and with a screwing motion raise the box off and deposit it on a temporary floorboard. If a super-clearer is available, set the latter over frames and replace box on it, as described in "Guide Book," page 54. Remove box next morning. If a super clearer be not used the bees must be driven below with smoke after removal of box, and frames carefully covered down with quilts before getting box of honey into some convenient place indoors where bees may be allowed to escape and return to their hive. Don't expose the box of honey where robber bees can reach it.

[2244.] *Swarming.*—This being my first year in bee keeping I am writing to you for a bit of advice. I have two stocks, both of which swarmed on June 3 and 4 respectively, and not desiring increase of stock I cut out all queen cells and returned the swarms; but a fortnight later No. 1 swarmed again, which swarm flew off and was lost. About a month later No. 2 sent out a swarm weighing 7½ lb., and being late in the season I killed queen and returned the bees. Then I supposed swarming had finished, and put supers on, but in a week No. 2 threw off another cast. I killed queen and returned bees, but two days later the bees again came out, this time accompanied with three queens. I removed queens again, and returned swarm. Yesterday (22nd) bees were hanging out, and to-day they swarmed with three queens accompanying them, while from No. 1 hive hardly any bees seem to come out, but there are plenty of drones. The hive has twelve frames in brood-chamber, and No. 2 has fourteen. The latter also has its sections full of bees and combs, about half of it worked out. Do you think there is anything the matter with Nos. 1 and 2, and how can I stop the swarming in the other hive, as I want to take both to the moors in about a week's time?—G. T. Hindmarch, *Brotton.*

Reply.—We should make sure No. 1 has a queen before taking it to the moors. No doubt the excessive and repeated swarming was largely caused first by returning swarm after destroying queen-cells, and then losing the old queen and swarm together. The other hive will not be likely to swarm again, so may be taken to the moors with safety.

[2245.] *Working an Apiary for Wax Production.*—Would you kindly let me know what would be the best way of working an apiary of fifteen hives solely for the production of beeswax?—R. H. C., *Chester, July* 19.

Reply.—Seeing that the object sought could never be made a success in this country, it seems a waste of labour to give any time to it. We need but to bear in mind how many pounds of honey are consumed by bees in secreting one pound of wax (see "Guide Book," page 13) and the comparative values of the two products, honey and wax, it becomes obvious that no one would dream of keeping bees here for wax production only.

[2246.] *Specific Gravity of Honey.*—I am going to graduate my honey-tanks and ripeners

so that I can see what amount of honey there is in them at any time, and should be much obliged if you would tell me, in the next issue of the BRITISH BEE JOURNAL, the relation of weight to bulk in honey as compared with water.—L. St. G. ORD (Capt.), *Bury St. Edmunds, July* 20.

REPLY.—"Specific gravity is the ratio which the weight of the *matter* of any substance bears to the weight of an equal *bulk* of pure water." In other words, specific gravity may be stated as the comparative weights of equal bulks of different substances, the assumed standard being 1, and sometimes 1,000. This standard is—for liquids and solids—pure distilled water. In this country the specific gravity is, however, taken at 60 deg. Fahr. The specific gravity of the different kinds of honey varies considerably. Sometimes the bees gather liquid which is little more than sweetened water. At other times, the nectar stored in the cells is so dense that it solidifies before the bees have time to seal it, as in the case of ivy and heather honey. Good clover honey, extracted after being sealed, has a specific gravity of 1·370, which may be taken as the average specific gravity of British honey. A cubic inch of pure (distilled) water weighs ·0361 lb. Hence ·0361 × 1·370 gives ·04945 lb. as the weight of a cubic inch of clover (average) honey. Therefore, ·04945 × 277·27 (= cubic inches in an imperial gallon) gives 13·7146 lb. as the weight of a gallon of average honey, or, in round numbers, 13¾ lb. to the gallon; and tanks, or "ripeners," may be graduated in gallons or parts of gallons, or to weight, as required or found convenient. The weight of an imperial gallon of distilled water is 10 lb. Syrup made from 7 lb. of cane sugar dissolved in 3 lb. of water has the specific gravity of average honey.

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING JULY 22, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
July 16....	30·20	69·0	76	56	20	65·3	—
„ 17....	30·17	68·0	81	50	31	61·4	—
„ 18....	30·13	71·5	81	55	26	67·1	—
„ 19....	30·01	73·2	85	60	25	71·6	—
„ 20....	30·01	72·0	81	61	20	70·3	·03
„ 21....	30·03	64·5	71	61	10	65·7	·03
„ 22 ...	30·04	62·3	64	60	4	61·9	·12
Means	30 08	68·6	77·0	57 6	19 4	66·6	·18*

* Total, ·18 in.

Mean vapour tension, 0·460 in.; mean relative humidity, 67 per cent.; mean temp. of the dew point, 56°·5. The rainfall, viz., ·18 in., =4,072·14 gallons, or 18·18 tons to the acre, or 14·4 oz. to the square foot. For the week ending July 15, the mean temp., viz., 65°·8, was +4°·9, and the rainfall, viz., ·05 in., −·53 in. The rainfall, July 2 to July 15, viz., ·25 in., is −·81 in.; and the mean temp., viz., 63°·3, is +2°·7. The rainfall, June 25 to July 15, viz., 1·03 in., is −·45 in.

FRED. COVENTRY.

Duddington, Stamford, July 24.

Bee Shows to Come.

August 2 at Henbury, near Bristol.—The Henbury District B.K.A. show of honey, &c., in connection with the Horticultural Society's show.

August 2. In Neston Park, Neston, Wilts.—Honey Show in connection with the Atworth and District Horticultural Show.

August 3 at Loughton, Essex.—Honey Show in connection with the Loughton Horticultural Society Annual Exhibition. Four classes for honey open to County of Essex. Entry fee, 6d. Schedules from C. E. Skinner, Hon. Secretary, Loughton. **Entries close July 29.**

August 3, 4, 5, and 7, at Liverpool.—Bee and Honey Show in connection with the Royal Lancashire Agricultural Society. Lectures and demonstrations with live bees in Bee Tent.

August 5 at Helsby, Cheshire (in connection with the annual flower show.) Open classes for extracted honey and bees-wax. Schedules from Dr. Briant, secretary, Helsby, Warrington. **Entries close July 31.**

August 7 at Beddington Park, near Croydon.—Surrey B.K.A. Annual Show, in connection with the Beddington, Carshalton, and Wallington Horticultural Society. Increased prizes. Five Open Classes, including single 1-lb. jar and section, with free entry. Schedules from F. B. White, Hon. Sec., Marden House, Redhill. **Entries close July 30.**

August 7, at Melton Constable Park.—Annual Honey Show of the North Norfolk B.K.A. Three open classes, including one for single 1-lb. jar of honey. Schedules from Hon. Sec., C. J. Cooke, Edgefield, Melton Constable. **Entries close July 28.**

August 7 and 8, at Delapre Park, Northants.—Northants B.K.A. Honey Show in connection with the Horticultural Exhibition. Three open classes with special prizes, including one for single 1-lb. jar of honey (entry free), six prizes, first prize, 20s. Schedules from Robt. Hefford, Hon. Sec., Kingsthorpe, Northants. **Entries close August 1.**

August 9, at Marlow, Bucks.—Annual Show in connection with the Marlow Horticultural Society, under the auspices of the Berks B.K.A. Bees, Hives, and Appliances, Honey, &c. Eleven Open Classes. Liberal Prizes.—For schedules, apply to A. D. Cripps, Hon. Sec., High-street, Marlow. **Entries close August 5.**

August 16 and 17 in St. John's Schoolroom, Blackpool.—Annual Show of the Blackpool and Fylde Horticultural Society. Exhibition of honey under the auspices of the Lancs B.K.A. Open classes for twelve 1-lb. sections and twelve 1-lb. jars extracted honey, with prizes of 20s., 10s., and 5s. for each. Schedules from R. Atken, Sec., 17, Devonshire-road, Blackpool. **Entries close August 7.**

August 17, at Goole.—Bee and Honey Show in connection with the Goole and District Agricultural Society. Six open classes, including one for single 1-lb. jar (entry free). Schedules from J. Luddington and N. S. White, Secs., Lindum House, Goole. **Entries close August 12.**

August 18, at Exeter.—Devon B.K.A., Second Annual Show of Bees, Honey, Hives, and Appliances, in connection with that of the Devon and Exeter Horticultural Society. Ten open classes. Schedules from Mr. H. Tolson, Park House, St. Thomas, Exeter. **Entries close August 12.**

August 23 and 24, at Shrewsbury.—Shropshire B.K.A. annual Show in connection with the Shropshire Horticultural Society's great Fête and Exhibition. Open classes for hives, appliances, honey, &c. Schedules and entry forms from Mr. Jno. Palmer, 17, Brand-lane, Ludlow. **Entries close August 14.**

August 25 and 26, at Dunfermline, N.B.—Bee and Honey Show, West of Fife and District B.K.A., in connection with the Horticultural Society. Schedules from Geo. Weston, Sec., Grant's Bank, Dunfermline. **Entries close August 22.**

August 29 at Northwich.—Cheshire B.K.A. Show, in connection with the Cheshire Agricultural Society. Open classes for honey, wax, and single hives. Schedules from Mr. T. A. Beckett, St. Werburgh's Chambers, Chester. **Entries close August 8; at double fees August 15.**

August 30 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 23.**

August 31, at Abergwili.—Honey Show in connection with the Horticultural Exhibition. Open classes for single 1-lb. jar; prizes, 10s., 7s. 6d., 5s., 2s. 6d. And single 1-lb. section; prizes, 7s. 6d., 5s., 2s. 6d. No entry fee. Schedules from J. Jones, 3, Gifre-gardens, Abergwili. **Entries close August 26.**

September 6 and 7 at Birkenhead.—Cheshire B.K.A. Show, in connection with the Wirral and Birkenhead Agricultural Society. Liberal prizes for hives, honey, &c. Eight classes, including one (free entry) for 1-lb. jar of honey with four prizes. Honey tent in good position in show yard. Bee lectures and demonstrations. Schedules from Mr. Edwardson, 6, Hamilton-square, Birkenhead. **Entries close August 23.**

September 7, in the Town Hall, Castle Douglas.—Annual Show of the Galloway Horticultural and Honey Society. Open classes, with liberal prizes for three 1-lb. jars, and for three 1-lb. Sections. Schedules from Mr. Thos. Myers, Castle Douglas, N.B. **Entries close September 2.**

September 13 and 14 at Derby.—Eighteenth annual show of the D.B.K.A., in connection with that of the Derbyshire Agricultural Society. Eight open classes, including two with free entry for 1-lb section and 1-lb. jar of honey. Schedules from F. Walker, hon. sec. D.B.K.A., 64, Gerard-street, Derby. **Entries close August 31.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

W. & J. Lipscombe (Glamorgan)).—*Driven Bees Taking Wing after Hiving.*—1. Your note since received clears up matters somewhat, but we fear that "dressing the frame-hive with syrup scented with peppermint"? before moving the driven bees into it has caused their flight from the hive through dislike to strong odour. 2. The brood from skep combs could easily have been hatched out by the bees after transferring, had we been asked how to do it.

J. H. (co. Dublin).—Much obliged for your verses, but they are hardly suitable for our columns.

G. G. (Windlesham).—*Ripening Honey.*—It is not nearly so safe to trust the "honey ripener" as to allow the bees to seal the combs over before removal for extracting.

F. W. Astbury (Salop).—*Worker Bee in Queen-Cell.*—The bee found in queen-cell is an adult worker. It occasionally happens that after a young queen has hatched out a worker enters the cell presumably to clean it out (or shall we say from curiosity), and the loose, hanging lid of the cell being noticed by another bee, the latter promptly fastens it down, as bees generally do any loose thing they come across in the hive. Thus the curiously inclined bee is unwittingly made a prisoner for life.

Fred. Hobman (Knottingley). — *Ripened Honey.*—It is always supposed that honey in comb, if well capped over before removal from the hive, is fully ripe, and being so will, if kept in a dry place, not be liable to fermentation.

Young Beginner (Wheaton Aston).—*Bees of Swarm Fighting.*—The bee sent is a queen, but whether young or old we cannot say as the insect was smashed out of shape in post. The fighting may have been caused by a small cast entering the hive accompanied by the queen sent, which is the most likely thing to have happened, supposing the stock still has a queen at its head.

A Young Bee-Keeper (Annfield Plain).—*Unfertilised Queen.*—The bee received was so flattened and smashed in post as to be unrecognisable as a queen at all, and, of course, no examination of the swarm was possible. The removal could do no harm, after discovering drone-brood in worker cells, as she was worthless. The queen-cells now being raised in the hive from the eggs of virgin queen will all be abortive, and the best means of saving the bees is to procure a laying queen for them.

John Kibble (Chorlbury).—*Working Section Racks below Shallow-frame Boxes.*—Our correspondent will find the substance of his letter dealt with in footnote to E. P. G. (3742), page 291.

West Norwood as a Bee District.—A correspondent writes:—In answer to H. Edridge (Lewisham), I have much pleasure in saying that the pasturage in that particular district is somewhat limited, and that, as far as my knowledge goes, there is not much room for bee-keeping on a large scale, as bees depend solely on lime-trees and a little clover in the various parks and open spaces. I should prefer Upper Norwood, or South, though the builder is very busy everywhere, and I fear we shall all, more or less, suffer in the near future.

Novitiate (Lancashire).—*Queen Killed and Cast Out.*—The queen bee was too dry for *post-mortem* examination. She had evidently been "balled" and killed by her own bees. The reasons for this matricidal act are so various as to make a safe reply difficult. It sometimes follows rough handling. The Hon. Sec. of the Lancashire B.K.A. is Mr. F. H. Taylor, Old Hall-lane, Fallowfield, Manchester. We shall need another sample of comb before deciding as to foul brood.

P. L. Aldridge (Oxon.).—*Experts' Exams.*—See reply to S. Gripe last week (p. 287).

W. J. Belderson (Lynn).—*Poppies as Honey Plants.*—The Shirley poppy, now largely cultivated in gardens for its beautiful blooms, is an excellent pollen-yielding plant, but none of the poppies are of any value for honey.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

WANTED, COWAN RAPID REVERSIBLE EXTRACTOR, perfect condition. CAMPBELL, Pearl Cottage, Windermere. 333

WANTED, STRONG SWARM (Ligurians preferred) in exchange for *British Bee Journal*, 1885-6-7-8, to July, '89, pure '99 Queens. HILL, The Park, Kirkby, Notts. 324

FIRST-CLASS SECTIONS of HONEY, 7s. 6d. doz. COCKS, Haddenham, Bucks. 323

BEES FOR SALE, 12 Skeps, Swarms, and Stocks. Apply, MEPPEM, Somerhill, Tonbridge. 321

FOR SALE, 12 doz. SECTIONS, finest quality, offers for lot. TOMS, Penryn. 329

25 DOZEN good 1¾ in. SECTIONS FOR SALE. Moderate price. T. HODGINS, Dangan, Roscrea, Ireland. 328

WINDSOR EXTRACTOR FOR SALE. Fair condition. 7s. 6d. A. R. MORETON, Leigh, Worcester. 325

SAINFOIN HONEY WANTED (Sections and Extracted). Send 2-oz. sample to F. SLADEN, Ripple Court Apiary, Dover.

FOR SALE, TEN DOZEN SECTIONS, all well filled and sealed, 8s. per doz. Also 1,000 lb. finest EXTRACTED HONEY, 6d. per lb.; samples, 2d. A. E. ROWELL, Ashdon, S. Walden, Essex.

WHAT CASH OFFERS or EXCHANGE for 15 STOCKS of DRIVEN BEES, together warranted healthy. THOMPSON, Apiary House, Gowdall, Snaith, Yorkshire. 336

DRIVEN BEES.—I shall commence early in August. 3s. 6d. per stock, with Queens. Orders in rotation. Boxes returned. PULLEN, Ramsbury, Hungerford. 335

23RD YEAR.—YOUNG TESTED QUEENS, 3s. 9d., delivered. Three frame nuclei, young tested Queen Bees and Brood, 12s. 6d., on rail. ALSFORD, Expert, Blandford. 334

ANTIQUE OAK CHEST (panelled), cash, £6 15s., worth double; or Exchange Honey, Bees, or anything useful. Apply, 567, Collyhurst-road, Manchester. 320

STRONG three frame Nuclei 1899, tested QUEENS, 10s. 6d. each; fine tested 1899 Queens, 3s. 6d. each. Guaranteed healthy and safe arrival. C. WHITING, Valley Apiaries, Hundon, Clare, Suffolk. 331

FOR SALE.—TEN STOCKS of ENGLISH BEES, in bar-frame Hives (one "Wells.") Thoroughly healthy. Inspection invited. The lot for £10. Apply, A. GOODING, Cobham, Gravesend, Kent. 327

TWELVE STOCKS of BEES FOR SALE, in bar-frame Hives, standard size. Purchaser to pack and fetch them away. What offers? Apply, J. BURGESS, Church Cottages, Hatfield, Herts. 326

PRIME WILTSHIRE-DOWNS HONEY, Sections and Extracted, price: Sections, 8d. each, extracted, 7d. per lb. Quality excellent. E. W. F. trusts this may meet the eye of the many kind friends who purchased of him in 1898. THE APIARY, Amesbury, Wilts. 322

SHALLOW FRAMES COMB for the heather, 5s. dozen. SHALLOW FRAME SUPERS, containing 8 frames, spaced 1⅞ in., 5s. each. The above are all this season's comb, quite clean, free from disease, and ready for immediate delivery. EDWARD ROBB, The Apiary, Outwell, Wisbech. 330

ORDERS BOOKED for early Supply of healthy DRIVEN BEES, 1s. 3d. lb.; 40 lbs. 1s. lb. Boxes returnable. Also some Virgin Queens not required, 1s. each. Satisfaction, with safe arrival guaranteed. For Sale, a quantity of good Clover Sections, 7s. 6d. doz. Also Extracted Honey, 56s. cwt. Sample free. Approval. SPEARMAN, Colesbourne, Andoversford. 332

FOR SALE, SIX good, healthy STOCKS of BEES in bar-frame hives, nearly new, with lift for tiering up sections, queen excluder, and two section-racks to each hive. All have 10 to 12 frames in body box untouched by extractor. £1 each; two skeps, 10s. each; or £6 10s. the lot. A bargain. W. HORSLEY, Scalbro'-road, Norton, Malton.

ENGLISH MADE HONEY JARS (1-lb. screw-cap), 14s. per gross; sample, 6d. JAS. DYSON, Stainforth, Doncaster. F.N.

Prepaid Advertisements (*Continued*).

HONEY LABELS with name and address, from 2s. 6d. for 250; 6s. 1,000. GUEST, King's Norton. 304

SPLENDID CLOVER SECTIONS FOR SALE. Apply, HY. WADDINGTON, Kirby Hill, Borobridge, Yorks. 306

CHOICE YOUNG QUEENS of the highest quality at low prices. Send for my circular. EDWARDS, "Beecroft," Ashford, Staines. 297

"W.B.C." HIVES.—Make your own at third the cost. For particulars, send stamped addressed envelope. PRIDEAUX, Whitchurch, Salop. 302

FOR Delivery, 1st August, strong three-frame nuclei '99 tested QUEEN from grand strain, 15s. GUTHRIE, Expert, Doonfoot, Ayr. 296

PROLIFIC QUEENS. Nuclei and Swarms. Stocks—Skeps or Frame Hives. E. WOODHAM, Clavering, Newport, Essex. 286

SELECTED FERTILE ENGLISH QUEENS, 5s. 6d. each, post free, in travelling cage. JEMIESON & BAKER, Bee Specialists, Dringhouses, York. 314

QUEENS, STOCKS, NUCLEI, and SWARMS. A few more orders can be accepted. List free. Rev. C. BERETON, Pulborough, Sussex.

COMFORTABLE APARTMENTS for Brother Bee-keepers visiting Douglas. HORSLEY, Merridale House, Empire-terrace, Top of Castle Drive, Isle of Man. 183

FURTHER REDUCTIONS. TRANSPARENT CELLULOID QUILTS, post free, 1s. 6d.; CELLULOID QUEEN EXCLUDERS, post free, 1s. 6d. R. H. COLTMAN, Bee-Appliance Maker, Burton-on-Trent.

LACE PAPER for GLAZING SECTIONS. 100 strips, 7d., 200, 1s. 2d., 300, 1s. 6d., 500, 2s. 3d., 1,000, 4s. Post free. Best quality. Neat Patterns. W. WOODLEY, Beedon, Newbury.

1899 LAYING QUEENS, reared from Stock, possessing the most desirable qualities, 5s.; two, 9s. Virgin Queens, 3s.; two, 5s. WM. LOVEDAY, Hatfield Heath, Harlow, Essex.

FOR SALE, excellent well-filled 1-lb. SECTIONS, good colour, 8s. per doz. Carriage paid on six doz., upwards. E. DAVIS, Great Bookham, Surrey. 312

BRICE'S RELIABLE QUEENS. Well-known strain, one quality, one price. Mated tested Queen, 5s. 6d. Post free in perfected travelling and introducing cage. Safe arrival guaranteed. HENRY W. BRICE, 100, Brigstock-road, Thornton Heath.

2/2.—BEE GLOVES, as recommended by the great bee authority the Rev. W. E. Burkitt, 2s. 2d. per pair, post paid. Special terms for wholesale buyers. Manufactured by EDWARD REYNOLDS, Glove and Gaiter Manufacturer, Andover. 257

QUEENS, raised on scientific principles and under best conditions. Prices: Virgins, 2s.; Fertile, July, 4s. Booked in July for delivery end August and September, 3s. 6d.; otherwise 3s. 9d. Reduction for quantity. Satisfaction and safe arrival guaranteed. Cash with order. TAYLOR, Grasmere, Ilminster. 291

RABBITS, Lop-ear, one of the best strains, ears growing up to 26 inches. Outdoor reared. Very hardy. Bucks, fawn or grey, 3 months old, 3s. each; bucks, fawn, or fawn and white, 2 months old, 2s. each; 2 for 3s. 6d. Leeks, strong plants for present planting, 100, 6d. Postage free. WM. LOVEDAY, Hatfield Heath, Harlow, Essex.

DRAWN OUT SECTIONS FOR MOORS. Can spare a few hundreds at the following prices:—One doz. 3s., two doz. 5s. 6d., post free; four doz. 10s., eight doz. 18s., carriage paid. Sample by post, 5d. All carefully and securely packed. The sections are 1-lb. four-way, quite new and unsoiled, and not mutilated by saw cut, and the comb is beautifully white, fully drawn out, and attached to wood all round without popholes. Bees perfectly healthy. J. M. BALMBRA, 2, East Parade, Alnwick, Northumberland. 307

PURE IMPORTED ITALIAN QUEENS, 5s. each.
" " CARNIOLAN QUEENS, 6s. each.
ENGLISH QUEENS (best quality), 5s. each.
Safe arrival guaranteed in self-introducing Cages.
Cash with order.
HOWES, MELTON HOUSE, KNOWLE, BRISTOL.

Editorial, Notices, &c.

THE BATH BEE CASE.

KERBY *versus* PAVY.

Judging by the Press cuttings (numbering several scores) forwarded to this office, accompanied by letters containing all sorts of suggestions regarding the "Bath Bee Case," we should say very few persons possessing the slightest interest in bees can have failed to hear all about the case from some source or other, and in dealing with the subject here we have chosen the above title from the many headings to Press notices, more or less alarmist in character, because it at least conveys common sense.

The unfortunate part (to the bee industry) of the publicity given to the case—a publicity entirely out of proportion to its merits—is the difficulty of doing anything to counteract the false impression conveyed to thousands who have read garbled accounts, supplemented sometimes by misleading comments by Pressmen, who may mean no ill to bee craft, but have not the slightest technical knowledge of the subject, and are thus led to say absurd and altogether inaccurate things, tending to create an amount of animus against the bees which is entirely unwarranted.

However, in response to a good many requests, we must endeavour to briefly bring the facts connected with the unfortunate business before our readers in order that the views of bee-keepers may be kept as much within reasonable bounds as we desire them to be in the case of outsiders. Some of the letters before us contain requests, almost amounting to demands, that the British Bee-keepers' Association should take the matter up and carry the case to a higher Court. They forget that the Association has no funds available for such a purpose. Others, more moderate in their views, urge that a subscription be started to enable the defendant to appeal against the decision referred to.

We are also informed that Mrs. Pavy has herself appealed to the B.B.K.A. to take the matter up on her behalf, and has sent a statement purporting to contain facts, not brought forward at the time, which would put a different complexion on the case.

With regard to the latter, our sympathies are entirely with Mrs. Pavy —who, we learn, is the wife of a greengrocer, living next door to the plaintiff, Miss Mary S. H. Kerby—because we may readily assume that a verdict of "£10 damages, and costs on the higher scale," together with an injunction against keeping bees any longer in her garden, is serious enough in all conscience. So far, however, as the B.B.K.A. is concerned, it is unfortunate that no meeting of the Council will be held till September, August being the usual yearly vacation, when no meeting is held; but apart from this, as we have already said, the Association has no funds applicable for the purpose, consequently we do not see what the Council can do in the matter by way of carrying the case before a higher Court, even if disposed to do so.

On the point of law, too, we cannot shut our eyes to the fact of the case having been tried by a judge and a jury specially empanelled, while there was evidently entire unanimity in their verdict. It is of no use whatever to be told —as we are—that "the judge had a prejudice against bees." That will not weigh at all with the higher Court, and, according to the verdict, the "damage" and the "nuisance" were both proved to the satisfaction of the court. This being so, we should fail in our duty to readers of this journal and bee-keepers generally if we hesitated to deprecate further action in the line indicated. Our view is that the matter had best be allowed to drop so far as further law proceedings are concerned, but there is no need on that account to withhold sympathy of a practical kind from Mrs. Pavy, and if the several sums kindly promised towards the cost of further proceedings were appropriated to the reimbursement of the damages and costs already incurred, it will be to our mind a far wiser and better course than spending it on law.

We therefore close by saying that if a few of the gentlemen who have written us expressing interest in the case and a desire to do something practical, would form themselves into a committee for dealing with it, we will gladly become custodians, if desired, of any sums that may be subscribed. Among others we may name Messrs. Trimmings & McKinnon, of Gedling, Notts. (known to

readers as owners of the bees in the case of "Horses Stung to Death," some time ago), and Mr. Wyckham Blackwell, of Hamilton-in-Arden (who generously offers to subscribe one guinea towards a fund, who, if they agree with us, and will, with any others they may name, form a committee, we will gladly take charge of such a fund as we have suggested. Probably Mr. J. W. Brewer, the local schoolmaster, who was a witness on behalf of Mrs. Pavy, could name others, along with himself, who would assist. Anyway, we have made what seems to us the only desirable proposal we can think of, and it remains for readers to say whether they approve of our view or otherwise.

HORTICULTURAL COLLEGE, SWANLEY.

A PLEASANT AND INTERESTING FUNCTION.

On Friday, the 21st ult., the extensive grounds of this noteworthy establishment were the scene of gay animation. Many matters were in progress at the same moment. Inside the large saloon Lady Lennard, supported by the Principal and Governing Body, presented prizes to successful students in horticulture, and many young lady gardeners received awards.

Adjacent to the College apiary, Mr. W. Broughton Carr—one of the examiners—wisely adjourning from a temp. of 90 deg. in the bee-house to the cool shade beneath the trees outside, and seated with an empty hive for a table, was kindly and patiently testing the candidates' theoretical knowledge for the B.B.K.A. third-class expert certificate; and away in the far corner of the meadow, in the British Bee-keepers' Association's apiary, courteous Mr. Ernest Walker—the second examiner—was scrutinising the practical manipulation of live bees by the students. Visitors were being shown round the gardens and glass-houses, some of which hung with luscious bunches of ripe grapes, with green cucumbers, or large trusses of bright tomatoes.

For two days the bee experts' examination continued, the number of candidates being sixteen, and entailed much labour on the examiners.

In the evening the students entertained their visitors with a concert, in which vocal and instrumental effects, including Haydn's Toy Symphony, were admirably rendered. Perhaps the most interesting feature of this part of the proceedings was the presentation of an illuminated address and gold watch to Mr. William Herrod, the College Apiarian, Demonstrator, and Lecturer, who has been untiring in his efforts to promote a knowledge of apiculture amongst the students—a fact which they have not been slow to recognise, and which was accentuated by the loud and continuous applause with which Mr. Herrod was greeted on rising to express his thanks to the students.

The concert was brought to a close with "Auld Lang Syne," sung in the time-honoured manner, and with many cheers for the Principal and officials of the College.

This being the conclusion of the College two-years' course, many students were taking their farewells.—(*Communicated.*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[3748.] With the advent of August our honey harvest in the south has ended. There are a few districts in which heather still grows, but this source of honey has been curtailed considerably during the past fifty years by the many enclosure Acts which have done away with former "rights" and put an end to the gorse and heather and wild thyme that helped to fill the honey-pot.

The continued heat has dried up the aftermath of white clover; even "charlock" is stunted and withered in this part of the country. Our honey crop, however, is a full average one, in both quantity and quality, sections good in colour and flavour, and well filled.

The "Japanese puzzle," referred to by Mr. Grimshaw, is easily solved by my bees; year after year they enter the sections and start work as soon as the racks are placed over the brood-nest. Has "heredity" anything to do with it?—as many generations of bees have been working in sections for close on two decades—or is it "management," *i.e*, the putting on just when required? This may have something to do with the success always attained in our apiaries. The strain of bees, too, may be an integral factor in filling sections; any stock that does not come up to my idea of good work in capping, sealing, and filling sections well is noted down, and I take care that a queen from some of my best strain takes over the maternal duties of the colony as early as possible. Again, I endeavour to improve my strain every year by breeding from stocks that show the largest number of good points. First I want quantity, then, having got the honey in the sections, it must be evenly capped and well sealed, not with wax plastered on and often daubed with propolis. I also look for gentleness of disposition; which so tends to comfort in working,

besides contributing to the "sociableness" of neighbours. If bees are vicious and spiteful, stinging all and sundry, ones neighbours become the reverse of friendly disposed towards both bee-keeper and his bees. Some aver that vicious bees are the best workers, but I know what my best stocks are capable of doing. I may tell your another time what my best colony did in a certain number of June days during the present year.

Working Sections under Shallow-Frames.—I have three or four racks of sections under shallow-frame boxes at the present time, but it was because I had no time to extract and no extra boxes of combs to put on. Therefore, I "rigged up" the section-racks with strips of wood nailed around the top to make them large enough for the boxes of shallow-frames (full and nearly sealed) to rest on and keep the bees from getting out at the junction of crate and box.

Ventilating Hives.—During the present spell of hot weather, with the thermometer over 80 deg. in the shade, and 120 deg. to 140 deg. in the sun, no wonder the poor bees are prone to get outside the hives for a "cooler." It is in such extreme heat that the grateful shade of trees is appreciated not only by the bee-keeper when working in the apiary but by the bees also. Some of my hives lay themselves out to provide shade, and I know of none better adapted to the comfort of its inmates than the "combination hive." A wedge at rear, or a stone to raise the roof, immediately sends a current of cool air around the supers, and with a space on the under side of dummy the brood-nest can be relieved at once, especially where the hive-body is not fixed to the stand, and the entrance extends the whole width of the hive. Thus, with a little trouble on the bee-keeper's part, the bees are rendered comfortable and work proceeds merrily. In fact, I believe that "shade" removes much of the viciousness bees sometimes display on very hot days. Boards laid across the roofs or covers of hives make fair shades, especially if the covers and boards are painted white or whitewashed.

Having secured the honey crop, the next thing is to prepare it for market. Sections should be scraped clean of propolis and bits of wax, and if a dry, warm cupboard is available store it in such a place. Nothing makes better storing boxes than the racks in which the sections have been worked. In using these lay a sheet of paper on the bottom of rack and pack the cleaned sections back into it, and then wedge all up tight. In properly made racks the sides are as high as the sections, so that several may be placed one on top of the other without crushing the sections in the racks. To those who wish to put their produce on the market so as to realise the best price, I would say, store your honey as suggested above, and glaze the sections just when required by customers; do not glaze a quantity beforehand, because if there is the slightest leakage of honey the sections will be soiled, and lose the freshness of those just done. Nothing tends more to attractiveness in looks than the lace-edged paper. The lace on front of glass and the plain paper on the wood of section gives it a clean, tempting appearance, especially when unmutilated sections are used. But for the split-top section, and those more or less divided ones, I have devised a new style of lace band, with lace edges on both sides, and in two widths, suitable for either narrow or wide sections. These new bands cover up any thumb and finger marks, propolis stains, and all other little disfigurements on the wood, in fact will, I hope, help to sell the honey. Nothing, to my mind, has so much retarded the development of the comb-honey trade as these split-sections, whether one side, three sides, or four sides. As a lady told me some time back, her friends loved honey in the comb, but objected to the foundation in the slit of the section; it looked so objectionable.—W. Woodley, *Beedon, Newbury.*

ASPECT FOR HIVES.

DOES IT AFFECT THEIR PROSPERITY?

[3749.] As 1898 will always be remembered for its black honey, so I imagine will 1899 for its fearfully cold week (May 21-28), which checked breeding and work in the hives of most bee-keepers; at least, of those who happen to live at the top of a hill. My thirty hives have been recovering from this visitation almost in the precise order in which they stand. This strikes me as so curious a result that I call attention to it in case others may have noticed the same fact, in which case some useful principles may perhaps be drawn for our guidance in placing our colonies.

My hives stand in two rows, like the two arms of a carpenter's square, one facing east, the other south. I have long given up the side facing west, finding that its colonies were always beaten by the others. All have a high hedge of laurels, &c., behind them, and a row of berberis between them and the hedge. This plant comes into bloom always in the north-east corner of the garden about a month before the rest, and of the hives which stand along that row facing south, those to the west are the most backward, increasing in strength almost regularly as they get eastward; those in the north-east corner being far the strongest. Similarly, of those which face east, the northern end is the most advanced, and the southern the least so, the mark of merit of the intermediate ones being almost exactly in the order of their position. I have not moved the hives in any way since last winter, though, having long observed north-east to be the best corner, I have placed them rather thicker there than elsewhere.—C. C. James, *Worthan Rectory, Diss, July* 27.

[The diagram sketch sent is interesting as bearing out the definite results stated in our reverend correspondent's letter.—Eds.]

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

The photos from which we this week illustrate our "Homes of the Honey Bee" show the bee-colony annually established by the Dalry Bee-Keepers' Association on the heather clad hills at Knockondon, about four miles out from the town of Dalry, Ayrshire. Only a portion of the "colony" is shown, the seventy-two hives comprised in the whole occupying more ground than we could get into the picture. It affords, however, a good idea of a typical Scotch bee-encampment at the "heather," and we are pleased to learn that the annual "outing" of Dalry bee-men is made the occasion of hearty good fellowship combined with an enjoyable time "among the bees" and accompanied by profitable bee-talks which tend to the advantage of all concerned.

The views seen—including the capital "snap-shot of a familiar incident" which we have heard a Scotsman call a "wee bit o' a prod!"—were taken last year by Sergeant-Instructor W. Martin, of the 1st Volunteer Brigade Royal Scots Fusiliers, whose head-quarters are, we presume, at Dalry. Sergeant Martin now a B.J. reader and a bee-keeper—in response to our request for some particulars regarding the photos writes:—About thirty members, among them myself (armed with my camera), started off in three "brakes" and arrived at the colony about three p.m., and I managed to secure the pictures sent for B.B.J. if suitable for publication.

We may add that Sergeant Martin when on active service spent some years in the East Indies, and while there took a good deal of interest in studying the insect life of those Islands. Since settling down at home again as Instructor of Volunteers he has taken kindly to bee-keeping.

The photographs sent were taken by him when on a visit with the Dalry Bee-Keepers' Association at their "Bee Colony," which is yearly established on the Knockondon Hills in Dalry, Ayrshire, during the time the heather is in bloom. "In this enclosure," he tells us, "there are seventy-two hives, and they are usually kept here four or five weeks, or while the heather continues in bloom. The association numbers about forty members, who possess in all some 250 hives, and have all the necessary appliances required for bee-culture, which are used by the members when required." Continuing his notes Sergeant Martin goes on to say: "I only started bee-keeping last year, and am therefore a recruit in the ranks of bee-keepers. Consequently I

DALRY (AYRSHIRE) BEE-KEEPERS' ASSOCIATION.
(Members' Hives at the Heather.)

have been obliged to appeal to our worthy president, Mr. R. Graham, for a little information to 'go along with the pictures in print.' Mr. Graham is the oldest member in our association, and has been a bee-keeper for over fifty years, sometimes keeping as many as thirty hives at a time. In all these years, too, he has only been troubled with foul-brood in three hives. Our president took first prize for heather honey at the famous Crystal Palace show in 1874. He was well acquainted with the late Mr. Abbott, who founded the BRITISH BEE JOURNAL, and relates a proverb told by him when in Glasgow at the Honey and Flower Show in 1876, viz, 'Bees have stings, and know how to use them; men have stings, and know how to use them; but the sting of man is far more full of venom than that of the bee.'

"The photo entitled 'Stung!' shows Mr. Graham acting the Good Samaritan by extracting a sting from the face of a comrade who has been less fortunate than himself.

"The best honey season Mr. Graham has ever experienced was 1874, one of his hives yielding that year 120 lb. of comb-honey.

"All honey raised by members of the association is disposed of locally, clover-honey selling at 1s., and heather at about 1s. 2d. per lb.

"Mr. A. McNulley is our secretary, and faithfully and well fills that office, and is most obliging to the members of the association, and others who require information on bee-culture.

"As already said, I am only a recruit in the ranks, but I take much pleasure in attending to and looking after the bees and find the work very pleasant indeed.

"Last of all, I would strongly recommend the Sergeant-Instructors of Volunteers, who I know are located in the many small towns and villages throughout England and Scotland to invest in a hive of bees, and they will find a profitable pastime for the many hours they have to spare in the summer and other times of the year."

W. MARTIN,
Sergt.-Ins. 1 V.B.R.S. Fus.

STUNG (A Snap-shot. 1898.)

CORRESPONDENCE.

(*Continued from page* 301.)

QUEEN VAGARIES.

[3750.] Perhaps your readers may find the following account of interest. It seems to me curious and unusual. A swarm of mine came off July 5. The parent stock was removed to a fresh stand, thus leaving no flying bees. On the 8th I removed one sealed queen cell to another hive, leaving certainly five or six other sealed cells. On the 10th I opened the hive again, intending to transfer another queen cell to another hive, when I discovered that so far as I could see every cell had been destroyed, from which I concluded one young queen had hatched out. On July 17 I was about to unite this lot to another, but when I lifted the frame out on which the young queen was, she was piping loudly, so I shut the hive up again. Half an hour afterwards the bees swarmed from this hive, and I put them temporarily into a skep. Two or three hours after this the young queen came out of the skep to be mated, and I think was successful. I thoroughly examined the hive and could discover no queen cells, in addition to which the bees left were very agitated all day. They had a rack of sections on and therefore had plenty of room.—C. H. L., *Skipton.*

BEES IN KENT.

[3751.] I thought readers of B.J. would like to hear of the extraordinary flow of honey we have had in this district for the past three weeks. I took off two boxes of shallow frames from a couple of my stocks and replaced them with racks of sections on July 20, and four days later I found the bees had stored at least 14 lb. honey in each lot of sections. It is first-class, too, chiefly from the limes. All my section racks and boxes of shallow frames are full.—George Dow, *St. Mary Cray, Kent, July* 29.

BRICE'S SWARM RETAINER.

[3752.] This apparatus, although very useful, has not answered as I anticipated. I mean, it has not enabled me to take a swarm; as, when swarms have issued, the queen has always returned to the hive, and in one case it would appear the queen was probably killed either by her own bees or a virgin. A swarm issued from a hive on July 16 through the retainer, and I captured the queen, and sent her to Mr. Brice, who kindly examined her, and pronounces her to have been a virgin. No doubt the same thing occurred last year with the same stock, when a swarm came off in the same way. At the same time the "retainer" will prevent swarms headed by valuable queens uniting to the vexation of the owner. In most cases I have found that swarms on issuing collect on a branch, and speedily break up and return to the hive on finding themselves minus the queen. It would, therefore, appear that too much reliance must not be placed on its acting automatically, and the owner must watch for signs of swarming, and then examine the stock and take measures accordingly. It is, however, of no use to merely destroy queen-cells; the only plan would seem to be to make an artificial swarm, *i.e.*, accept the inevitable, even if they are afterwards united. The only perfect retainer or catcher would appear to be one that will allow the queen to leave the hive but not to return.

Of course the retainer cannot be removed during the excitement of swarming or the queen might fly.—Alpha, *Hull.*

THE CULTIVATION OF BEE PLANTS.

[3753.] I have been very interested lately in the cultivation of bee plants. So far I have only had time to look after a very small bee-garden, but it has given me an immense amount of enjoyment, and I have found that an odd hour spent in gardening work on a dull day when there is not much going on in the apiary is a really delightful change of occupation, which I can recommend most thoroughly to all brother bee-keepers.

The feeling of pleasure that one has on seeing the growth that each plot of plants has made after the lapse of a day or two reaches a pitch when the flower-buds appear, and subsequently swell and burst into bloom, and it recalls the intense pleasure, now almost forgotten, that was experienced when I hived my first swarm. Little plots of various plants recommended by different people as good for bees are now, many of them, making a fine show of bloom, and on dull and windy days when the bees cannot do much further afield, one gets a very good idea of the value as honey-producing plants that the bees attach to each. Then, after this, there is the pleasure of resorting to various means in order to propagate any plant that seems to be more specially interesting or useful than the rest. I admit that there is a slight damper to one's ardour to find that some of the prettiest and most fragrant of these garden bee plants have no esculent value to induce farmers and market gardeners to cultivate them on a large scale, so that cultivating them in one's garden for the small amount of honey that they yield to the bees is not a profitable occupation, and one that must not be indulged in on a large scale by the bee-keeper who lives by his work. A feeling of this kind has been the only drawback to my pleasure in bee-gardening, and I have felt that the time, though not very much, that I have spent on it, has been in a sort of sense stolen. In these days of rush and labour-saving devices, it is almost a crime to spend much time in nursing and transplanting annuals which only make ourselves and a few dozens of our bees happy for a week or so, and then all is over, when there is the much more important daily bread to be earned. One who

cultivates bee-flowers in this way gets almost as unpractical as the old-fashioned skeppist, with whom the sowing of mignonette and borage in the garden was one of the golden rules of successful bee-keeping. I am afraid it must be stated, unhesitatingly, that these things help the bees hardly at all, because they come in the summer, just when there are acres of far superior pasturage in the fields which are quite as easy of access to the bees in the quiet warm weather that then generally prevails, and of course much preferred by them. F. W. L. SLADEN.

(*Concluded next week.*)

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING JULY 29, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
July 23....	29·84	60·6	63	58	5	60·3	·20
,, 24....	29·92	62·5	72	55	17	62·9	—
,, 25....	30·13	64·0	73	49	24	60·2	—
,, 26....	30·13	71·5	76	61	15	68·0	—
,, 27....	30·29	62·1	69	47	22	57·2	—
,, 28....	30·34	65·0	75	48	27	60·6	—
,, 29....	30·22	64·5	76	51	25	62·7	—
Means	30·12	64·2	72·0	52·7	19·3	61·7	·20*

* Total, ·20 in.

Mean vapour tension, 0·428 in.; mean relative humidity, 71 per cent.; mean temp. of the dew point, 54°·5. The rainfall, viz., ·20 in., =4,524·60 gallons, or 20·20 tons to the acre, or 1 lb. to the square foot. For the week ending July 22, the mean temp., viz., 66°·6, was +5°·4, and the rainfall, viz., ·18 in., was −·44 in. The mean temp., July 2 to July 22, viz., 64°·4, is +3°·6, and the rainfall, viz., ·43 in., is −1·27 in. The rainfall, April 2 to July 22, viz., 5·89 in., is −1·64 in., and January 1 to July 22, viz., 10·84 in., is −1·80 in.

EXCESSIVE RAINFALL.

In the *Weekly Weather Report* of the Meteorological Office for the week ending July 22, I find that rain fell on three days at Holyhead to the amount of 3·60 in., which is +3·02 in., and that the largest daily amount at that station was 3·36 in., on the 20th, which amount equals 76,013·28 gallons, or 339·36 tons to the acre, or 16·80 lb. to the square foot. At Shaftesbury and Culhampton 1·9 in. fell on the 22nd (at the latter place in two hours); at Killarney 1·72 in. was recorded on the same date in an hour and a half.

FRED. COVENTRY.

Duddington, Stamford, July 31.

Queries and Replies.

[2247.] *Transferring from Skeps to Frame Hives.*—Will you kindly answer the following questions in an early issue of B.B.J.? I find the journal to be the greatest help, and look forward to its arrival, especially out here in Norway, where I am staying. This part of the world contains acres of white clover, now in full bloom, and not a hive of bees kept anywhere. I have, however, seen a lot of bumble bees of various kinds, large and small. My questions are as follow:—1. I put a swarm in a skep after a journey of 150 miles on June 2nd, in England, on a stand 100 yards from my apiary. I wish to drive the bees in August, and put them in a frame hive in the apiary. Can I do this, or would the bees go back to their old situation? 2. I should be glad to know what is the limit one can move bees in such circumstances. 3. I wish to drive two skeps in my apiary, and unite, and put them in a frame-hive 10 yards from where they now are. Would the same apply to these bees? 4. I find the bees have propolised the base of the section-rack. How can I prevent this?—"NORSKE," *Börset, Rindal, Övre Surendal, Norway, July* 7.

REPLY.—1. Some bees may return to the old stand, but if steps are taken to temporarily alter the outward appearance of the hive the loss will be very little. 2. About three or four yards. 3. In so short a distance as ten yards the skeps should be moved nearer together by 5 or 6 ft. each fine day, until they stand a couple of yards apart, before driving and uniting. 4. Some use vaseline to prevent propolisation.

[2248.] *Dealing with Foul Brood.*—I shall be very glad if you will tell me, through the B.J., what I did wrong in the following case. I was trying to cure a stock of foul brood for a friend, and acted according to the instructions contained in the article on the subject in the B.J. by Mr. Cowan two or three weeks ago. On July 15 I put an empty hive in the position occupied by the diseased stock (the latter being first moved a few yards away), and then shook and brushed all the bees off the frames in front of this hive and let them run in. Each frame was put on the fire as soon as all the bees were off. On the evening of the same day, when bees were clustered in the empty hive, a piece of perforated zinc was nailed across entrance, and bees were left for forty-eight hours (as per instructions). Two pieces of very open canvas were laid across top of hive, so that bees should not get into roof. On the 16th, about 3 p.m., I went to see how they were getting on, and found all but about a half-pint of bees dead—apparently suffocated! They seemed to be all saturated with honey, and lay on the floor-board in a mass, completely blocking entrance. It was a large hive, capable of holding fourteen or fifteen frames, so they had abundance of room. They were a pretty strong lot—the dead bees would have half-filled a skep, I should think. My intention was to have transferred them to a clean hive at the end of forty-eight hours, and fed on medicated syrup for a few days.—C. D. G., *Soham, July* 26.

REPLY.—We can only imagine that the bees were very numerous, and, not being

removed to a cool place in the present hot weather, the bees became excited, and in the endeavour to get out, had blocked up the entrance. It is always supposed that bees being starved in this way are kept cool and quiet, but in your case through insufficient ventilation, they were suffocated.

Bee Shows to Come.

August 3 at Loughton, Essex.—Honey Show in connection with the Loughton Horticultural Society Annual Exhibition.

August 3, 4, 5, and 7, at Liverpool.—Bee and Honey Show in connection with the Royal Lancashire Agricultural Society. Lectures and demonstrations with live bees in Bee Tent.

August 5 at Helsby, Cheshire (in connection with the annual flower show.) Open classes for extracted honey and bees-wax.

August 7 at Beddington Park, near Croydon.—Surrey B.K.A. Annual Show, in connection with the Beddington, Carshalton, and Wallington Horticultural Society.

August 7, at Melton Constable Park.—Annual Honey Show of the North Norfolk B.K.A. Three open classes.

August 7 and 8, at Delapre Park, Northants.—Northants B.K.A. Honey Show in connection with the Horticultural Exhibition.

August 9, at Marlow, Bucks.—Annual Show in connection with the Marlow Horticultural Society, under the auspices of the Berks B.K.A. Bees, Hives, and Appliances, Honey, &c. Eleven Open Classes. Liberal Prizes.—For schedules, apply to A. D. Cripps, Hon. Sec., High-street, Marlow. **Entries close August 5.**

August 16 and 17 in St. John's Schoolroom, Blackpool.—Annual Show of the Blackpool and Fylde Horticultural Society. Exhibition of honey under the auspices of the Lancs B.K.A. Open classes for twelve 1-lb. sections and twelve 1-lb. jars extracted honey, with prizes of 20s., 10s., and 5s. for each. Schedules from R. Atken, Sec., 17, Devonshire-road, Blackpool. **Entries close August 7.**

August 17, at Goole.—Bee and Honey Show in connection with the Goole and District Agricultural Society. Six open classes, including one for single 1-lb. jar (entry free). Schedules from J. Luddington and N. S. White, Secs., Lindum House, Goole. **Entries close August 12.**

August 18, at Exeter.—Devon B.K.A., Second Annual Show of Bees, Honey, Hives, and Appliances, in connection with that of the Devon and Exeter Horticultural Society. Ten open classes. Schedules from Mr. H. Tolson, Park House, St. Thomas, Exeter. **Entries close August 12.**

August 19 at Windsor.—Annual Flower and Honey Show of the Windsor and District Liberal Club. Five classes open to all. Schedules from the Secretaries, Messrs. J. Hyde and H. Sloane, 19, Peascod-street, Windsor. **Entries close August 11.**

August 23, at Falloden.—Honey Show, under the auspices of the Falloden and District Horticultural Society. Open class for two 1-lb. sections and two 1-lb. jars extracted honey. Schedules from Mr. A. S. Welsh, Secretary, Embleton, Christon Bank, R.S.O.

August 23 and 24, at Shrewsbury.—Shropshire B.K.A. annual Show in connection with the Shropshire Horticultural Society's great Fête and Exhibition. Open classes for hives, appliances, honey, &c. Schedules and entry forms from Mr. Jno. Palmer, 17, Brand-lane, Ludlow. **Entries close August 14.**

August 25 and 26, at Dunfermline, N.B.—Bee and Honey Show, West of Fife and District B.K.A., in connection with the Horticultural Society. Schedules from Geo. Weston, Sec., Grant's Bank, Dunfermline. **Entries close August 22.**

August 29 at Northwich.—Cheshire B.K.A. Show, in connection with the Cheshire Agricultural Society. Open classes for honey, wax, and single hives. Schedules from Mr. T. A. Beckett, St. Werburgh's Chambers, Chester. **Entries close August 8; at double fees August 15.**

August 30 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 23.**

August 31, at Abergwili.—Honey Show in connection with the Horticultural Exhibition. Open classes for single 1-lb. jar; prizes, 10s., 7s. 6d., 5s., 2s. 6d. And single 1-lb. section; prizes, 7s. 6d., 5s., 2s. 6d. No entry fee. Schedules from J. Jones, 3, Gifre-gardens, Abergwili. **Entries close August 26.**

August 31, at Bradford Abbas.—Yetminster District B.K.A. Annual Show in conjunction with the Bradford Abbas Flower Show. Open classes for Single 1-lb. Sections, four prizes (entry free), and for Best Frame-hive, two prizes (entry fee, 1s.).—Schedules from G. Leeding, Hon. Sec. B.K.A., Bradford Abbas, near Sherborne, Dorset. **Entries close Aug. 26.**

September 6 and 7 at Birkenhead.—Cheshire B.K.A. Show, in connection with the Wirral and Birkenhead Agricultural Society. Liberal prizes for hives, honey, &c. Eight classes, including one (free entry) for 1-lb. jar of honey with four prizes. Honey tent in good position in show yard. Bee lectures and demonstrations. Schedules from Mr. Edwardson, 6, Hamilton-square, Birkenhead. **Entries close August 23.**

September 7, in the Town Hall, Castle Douglas.—Annual Show of the Galloway Horticultural and Honey Society. Open classes, with liberal prizes for three 1-lb. jars, and for three 1-lb. Sections. Schedules from Mr. Thos. Myers, Castle Douglas, N.B. **Entries close September 2.**

September 13 and 14 at Derby.—Eighteenth annual show of the D.B.K.A., in connection with that of the Derbyshire Agricultural Society. Eight open classes, including two with free entry for 1-lb section and 1-lb. jar of honey. Schedules from F. Walker, hon. sec. D.B.K.A., 64, Gerard-street, Derby. **Entries close August 31.**

Notices to Correspondents & Inquirers.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Mr. Wm. Loveday, Hatfield Heath, writes :—In reply to your inquiry on behalf of F. Gifford, South Ealing, who inquired in B.J. for July 20 (page 286) as to the suitability of Hornchurch, Essex, as a bee district, I wish to say that, when residing at Romford, for twelve years previous to 1894, I frequently visited Hornchurch and its bee-keepers, and I found the district a very good one for bee-keeping, especially the east or Upminster side. At that time the builder was busy, and I don't suppose he has been idle since, but there must still be many of the large breadths of white clover, which then grew in such luxuriance, left. It is to be hoped, too, that the lovely walks of the district, where the nightingale breaks the stillness of the night, and the yellow-hammer at daydawn foretells hard times ahead, with his little bit of bread and

no cheese, will long remain for the benefit of the people.—*July* 31, 1899.

E. MAXWELL (Harborne).—*Ripening Honey.*—1. If honey is left on the hive till fully sealed over it requires no "ripening" indoors, but is ready for extracting. 2. Sections of comb-honey are sold as taken from the hive, after removal of propolis, if any, from the wood, and making look clean and nice. No one ever thinks of having honey for extracting stored in sections.

C. S. P. (Aldershot).—*Supering a May Swarm.*—It is now too late to super a swarm of this year, unless you have heather within reach. We should give the two extra frames to bring the total up to ten, but give no super room at end of July.

H. POTTS (Dutton).—*Vicious Bees.*—The bees have a slight tinge of Carniolan blood, but may be regarded as the "ordinary" variety, as nearly all native bees have a slight splash of the foreign element. They are small in size, and, so far as looks go, certainly remind us of vicious bees we have before met with.

J. D. (Caerdydd).—Bees sent are immature drones with aborted wings. They would be cast out as useless.

A correspondent writes:—"Is the district between Amersham and Aylesbury, in Bucks, a good one for the production of honey, and free from the bee pest, called foul brood?—GORDON."

[We will be obliged if any reader with local knowledge will afford the information asked for.]

We are requested by the gentleman whose name we gave in reply to A. J. G. (Malvern Link), p. 287, as Hon. Sec. of the Worcester B.K.A., to state that he no longer holds that office, having resigned some two years ago, and that the Rev. E. Davenport is now Hon. Sec. of the Association referred to.

SCOUGAL and ROBINSON (Northumberland).—*Dead Queens Cast Out of Hives.*—No 1 is an adult queen, and was no doubt fertile. No 2 is apparently a virgin queen.

J. B.—(Armadale, N. B.).—*Suspected Combs.*—There is no disease in either piece of comb sent. Thanks for your appreciation of B.B.J. and "Guide Book."

H. A. P. (Tunbridge Wells).—*Selling Bees.*—It is quite "possible" for a stock of healthy bees bought in April last to so develop foul brood by the end of July, as to show the "brown, coffee-coloured, putrid mass" in some cells.

ASSISTING A LEARNER.—A BEE JOURNAL reader writes:—"Can you inform me if any bee-keeper living in or near Bournemouth would kindly give a young lady—who wishes to commence bee-keeping—a few practical hints and allow her to visit an apiary to see a bee-hive opened for inspection? I enclose her address for handing to any one willing to afford help as desired. I know how willing all were in advising me, and therefore venture to make the request CHARLES F. WEBB, *Tottenham, N. July* 18."

[We will forward the address on receipt of a postcard.—EDS.]

L. QUAYLE (Glenmay).—*Judging Honey.*—It is now a good many years since we formulated a code of points for extracted honey, and although we do not *now* use any set "code" when judging, the one referred to has been approved by some well-known judges who use it to this day. It reads thus:—

Flavour	8	points.
Colour	6	"
Consistency (specific gravity)	6	"
Aroma	4	"
Uniformity	2	"
Condition	2	"
"Get up" (marketable form)	2	"
Total	30	points.

C. THOMAS (Bowood).—*Transferring from Skeps to Frame Hives.*—If the skep set on top-bar of frame hive six weeks ago still contains brood as stated, it only shows that the bees did not at once take possession of the frame-hive below. However, since the queen is now breeding well in the new combs of frame hive she will stay there, and the skep will soon have all its brood hatched out ready for removal.

D. H. (Burry Port).—*Exhibiting Granulated Honey.*—1. We have not seen *your* schedule, but in the class for granulated there is no restriction as to age, beyond excluding honey of the "*current* year." *Width of Lace-Edging for Sections.*—2. The safest way of fixing width of edging is to allow 3½ in. of comb-surface free of the lace paper.

M. L. (Anerley).—*Queen-Raising for Beginners.*—The insect sent is a queen-bee, but was so smashed out of shape in post as to be almost unrecognisable. Queen-raising is a branch of bee-keeping quite beyond the reach of beginners, who should first learn how to manage bees before attempting queen-rearing. Beyond all is it necessary to procure a guide book on bee-keeping, where all these operations are fully dealt with. No one can learn how to practice modern bee-keeping successfully from a weekly perusal of the JOURNAL.

T. A. W. (Bolton).—*Honey Sample.*—Honey is excellent in colour, consistency, and flavour.

C. G. (Leeds).—*Bees Annoying Neighbours.*—The trouble complained of arose no doubt from injudicious feeding at this season. We are led to ask, do you usually feed the bees preparatory to taking them to the heather? because that was never our practice when preparing for the moors; and if bees were

fed liberally during the day on Saturday, no wonder they were disturbed and on the prowl for more food next day (Sunday). If food was given at all under the circumstances named, it should be given after sundown and feeders removed same night if possible, to allow the bees to quieten down before morning.

GRIBO (Charlbury).—*Wax-Moth in Skeps.*—Comb contains nothing worse than the larvæ of wax-moth. Not the large and destructive moth (Galleria Cereana) but the smaller and more common one.

W. and J. T. (Llandilo).—Comb is affected with foul brood.

(*Reports of Shows at Cambridge and Pembury are unavoidably held over till next week.*)

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

DRIVEN BEES, with Queen, 4s. 6d. per lot. Boxes returned. MORETON, Leigh, Worcester.

SECTIONS, 7s. doz.; best, 8s. LING, Shady Camp, Linton, Cambs. 348

DRIVEN BEES, 1s. per lb. Boxes to be returned. W. MARTIN, Well Cottage, Downley, High Wycombe. 346

FINE tested ENGLISH QUEENS, bred from my selected strain, in introducing cage, post free, 5s. each. Ready now. W. WOODLEY, Beedon, Newbury.

HONEY in Bulk, £2 12s. per cwt. Special quotations for quantities. Samples, 5d. Apply, OWEN BROWNING, Kingsomborne, Stockbridge, Hants. 352

THREE healthy STOCKS of BEES, '98 Queens, with section crates, £1 each. HOPKINSON, 18, Lambton-place, Leeds. 345

HEALTHY DRIVEN BEES (orders booked now for delivery in August), 1s. 2d. lb. Cases free, not returnable. EDWARD ROBB, The Apiary, Outwell, Wisbech. 343

EXTRACTED HONEY, 5d.; Clover Honey, 6d.; Samples 3d. each; Sections, 6s. and 7s. doz.; Fertile Queens, 4s. post free. SALMON, Bee Expert, Haresfield, Gloucestershire. 353

SIX STOCKS BEES with Stores about 2-cwt., Fourteen Spare Hives, Two Extractors, 1-gross New Frames, Sections, Foundation, &c. Particulars, Cropudy Kennels, Leamington. 351

23RD YEAR.—Small SWARM for building up, 5s. 6d. Three-frame NUCLEI, QUEEN, BROOD, and BEES, 12s. 6d. QUEENS, 3s. 9d. Delivered. ALSFORD, Expert, Blandford.

TWO STOCKS of BEES FOR DISPOSAL in capital frame hives. Grand workers (specially selected). All honey untouched. Mrs. LUCAS, Vasterne Manor, Wootton Bassett, Wilts.

FOR SALE, Two very strong Swarms, in new skeps, headed by '98 and '99 queens respectively, 15s. each, also Two Skeps, fairly strong, headed by '99 queens, 9s. each. Packed and put on rail free. JAMES TODD, Armathwaite, Carlisle. 342

FOR SALE, new OBSERVATORY HIVE. Shown once; first prize. Made of beech and walnut, having a section-rack above. Cost 38s.; will accept 21s., or offers. Apply, H. SEAMARK, Willingham, Cambs. 350

DRIVEN BEES (orders booked for August 21st), 3s. 9d. per Stock, including Queen. Ditto, with young fertile Queen, 4s. 9d. (guaranteed). Disease unknown in district. EXPERT, care of *Bee Journal* Office.

FOR SALE, BARNESS Foot-power combined CIRCULAR, SCROLL SAW and BORING MACHINE in grand condition. Must be sold to make room for heavier machinery. A genuine bargain. Will sacrifice for £8 10s. A. T. PROCTOR, Leicester-road, Great Wigston, Leicester. 349

Prepaid Advertisements (*Continued*).

SPLENDID HONEY (this Season's), 8d. lb. if tins sent. Sample free. VICARAGE, Burton-Leonard, Leeds.

SMALL APIARY FOR SALE, including six bar-frame hives (two with young Queens), strong Stocks, all appliances for working Bees profitably. To be sold together or separately. £6 for lot. J. HILL, Dean Cottage, Dunning, Perthshire, N.B.

PRIME WILTSHIRE-DOWNS HONEY, Sections and Extracted, price: Sections, 8d. each, extracted, 7d. per lb. Quality excellent. E. W. F. trusts this may meet the eye of the many kind friends who purchased of him in 1898. THE APIARY, Amesbury, Wilts. 322

LACE PAPER for SECTION GLAZING (something new), in white, pale green, and pink; 1 in. wide. 100 strips, 7d.; 200, 1s. 2d.; 300, 1s. 6d.; 500, 2s. 3d.; 1,000, 4s. Also LACE BANDS (lace edge both sides), 2⅞ and 3½ in. wide. White: 100, 1s. 3d.; 200, 2s. 3d.; 300, 3s.; 500, 4s. 9d. Pink and Pale Green: 100, 1s. 6d.; 200, 2s. 9d.; 300, 4s.; 500, 5s. 6d. (Samples, 3d.) All post free. W. WOODLEY, Beedon, Newbury.

ENGLISH MADE HONEY JARS (1-lb. screw-cap), 14s. per gross; sample, 6d. JAS. DYSON, Stainforth, Doncaster. F.N.

CHOICE YOUNG QUEENS of the highest quality at low prices. Send for my circular. EDWARDS, "Beecroft," Ashford, Staines. 297

"W.B.C." HIVES.—Make your own at third the cost. For particulars, send stamped addressed envelope. PRIDEAUX, Whitchurch, Salop. 302

SELECTED FERTILE ENGLISH QUEENS, 5s. 6d. each, post free, in travelling cage. JEMIESON & BAKER, Bee Specialists, Dringhouses, York. 314

QUEENS, STOCKS, NUCLEI, and SWARMS. A few more orders can be accepted. List free. Rev. C. BERRETON, Pulborough, Sussex.

COMFORTABLE APARTMENTS for Brother Bee-keepers visiting Douglas. HORSLEY, Merridale House, Empire-terrace, Top of Castle Drive, Isle of Man. 183

FURTHER REDUCTIONS. TRANSPARENT CELLULOID QUILTS, post free, 1s. 6d.; CELLULOID QUEEN EXCLUDERS, post free, 1s. 6d. R. H. COLTMAN, Bee-Appliance Maker, Burton-on-Trent.

DRIVEN BEES.—I shall commence early in August. 3s. 6d. per stock, with Queens. Orders in rotation. Boxes returned. PULLEN, Ramsbury, Hungerford. 335

STRONG three frame Nuclei 1899, tested QUEENS, 10s. 6d. each; fine tested 1899 Queens, 3s. 6d. each. Guaranteed healthy and safe arrival. C. WHITING, Valley Apiaries, Hundon, Clare, Suffolk. 331

FOR SALE.—TEN STOCKS of ENGLISH BEES, in bar-frame Hives (one "Wells.") Thoroughly healthy. Inspection invited. The lot for £10. Apply, A. GOODING, Cobham, Gravesend, Kent. 327

BRICE'S RELIABLE QUEENS. Well-known strain, one quality, one price. Mated tested Queen, 5s. 6d., post free in perfected travelling and introducing cage. Safe arrival guaranteed. HENRY W. BRICE, 100, Brigstock-road, Thornton Heath.

2/2.—BEE GLOVES, as recommended by the great bee authority the Rev. W. E. Burkitt, 2s. 2d. per pair, post paid. Special terms for wholesale buyers. Manufactured by EDWARD REYNOLDS, Glove and Gaiter Manufacturer, Andover. 257

ORDERS BOOKED for early Supply of healthy DRIVEN BEES, 1s. 3d. lb.; 40 lbs. 1s. lb. Boxes returnable. Also some Virgin Queens not required, 1s. each. Satisfaction, with safe arrival guaranteed. For Sale, a quantity of good Clover Sections, 7s. 6d. doz. Also Extracted Honey, 56s. cwt. Sample free. Approval. SPEARMAN, Colesbourne, Andoversford. 332

PURE IMPORTED ITALIAN QUEENS, 5s. each.
" " CARNIOLAN QUEENS, 6s. each.
ENGLISH QUEENS (best quality), 5s. each.
Safe arrival guaranteed in self-introducing Cages.
Cash with order.
HOWES, MELTON HOUSE, KNOWLE, BRISTOL.

Editorial, Notices, &c.

BERKSHIRE B.K.A.

HONEY SHOW AT WINDSOR.

The Berkshire Bee-keepers' Association (Windsor district) held a show of bees, honey, and bee appliances, in the Home Park, Windsor, on the 22nd ult., in conjunction with the Prince Consort's Association.

It is interesting to note that the Berks B.K.A. has now been in existence for twenty years, and that Mr. W. S. Darby—upon whom, as hon. secretary, the arrangements of the recent show devolved—called the first meeting which led to its establishment in 1879. The first exhibition of the Association was held in the same place and under the same auspices as on the present occasion.

In one of the three tents nearly 800 lb. of honey, in sections and in jars, were on view; and in the adjoining tent were exhibited several good collections of bee appliances.

Taking the show generally, it was an exceedingly good one, and during the afternoon the President, Princess Christian, was conducted round the exhibition by Mr. W. S. Darby, the hon. secretary, who was responsible for all the arrangements. Her Royal Highness recognised several bee appliances which she had seen at the Royal Counties Show. The Princess asked after the welfare of the Association, and was pleased to hear that it was doing a great deal of good in the rural districts, such being one of the objects of the Society.

Mr. A. D. Woodley gave several bee demonstrations in a separate tent.

The duties of judging were entrusted to the Rev. S. R. Wilkinson, of Marlow, and Mr. W. Carter, Windsor, who made the following awards:—

Collection of Hives and Appliances.—1st, Lanaway & Sons, Redhill; 2nd, J. S. Greenhill, Wimbledon.

Complete Hive for General Use.—1st, Lanaway & Sons; 2nd, J. S. Greenhill.

Observatory Hive, with Bees and Queen.—1st, J. S. Greenhill.

OPEN CLASSES.

Three 1-lb. Sections Extracted Honey.—1st, H. W. Seymour, Henley-on-Thames; 2nd, W. Woodley, Newbury.

Three 1-lb. Jars Extracted Honey.—1st, W. Patchett, Caistor; 2nd, T. Blake, Stockbridge.

MEMBERS ONLY.

Twelve 1-lb. Sections.—1st, W. Woodley; 2nd, A. Canning, Newbury.

Six 1-lb. Sections.—1st, H. W. Seymour; 2nd, W. Woodley.

Twelve 1-lb. Jars Extracted Honey.—1st, A. Canning; 2nd, W. Woodley.

Six 1-lb. Jars Extracted Honey.—1st, A. Canning; 2nd, W. Woodley.

Best Exhibit of Comb and Extracted Honey.—1st, A. Canning; 2nd, W. Woodley.

WINDSOR DISTRICT ONLY.

Six 1-lb. Sections.—1st, G. Sawyer, Marlow; 2nd, R. Brown, St. Leonard's Hill.

Six 1-lb. Jars Extracted Honey.—1st, G. Sawyer; 2nd, J. W. Butler, Chalvey.—(*Communicated.*)

LINCOLNSHIRE B.K.A.

SHOW AT BLANKNEY.

Glorious weather favoured this Show, held on August 2 in the private grounds of Blankney Hall, which are so extensive and delightful that it is no wonder such crowds of people are attracted there every year. There was a splendid display of honey, almost equalling that exhibited at the County Show at Louth. Dr. Percy Sharp lectured in the bee tent, and Messrs. F. H. K. Fisher and R. Godson acted as judges of bees and honey, the following being their awards:—

Observatory Hive, with Bees and Queen (five entries).—1st, B. C. Blackburn, Billinghay; 2nd, D. Seamer, Grimsby; 3rd, J. Emerson, Lincoln; 4th, Dr. P. Sharp, Brant Broughton.

Twelve 1-lb. Sections (ten entries).—1st, A. W. Weatherhogg, Willoughton; 2nd, W. Patchett, Thoresway; 3rd, Tom Sells, Uffington; 4th, W. Wells, Uffington.

Twelve 1-lb. Jars Extracted Honey (sixteen entries).—1st, N. Duckering, East Barkwith; 2nd, H. Pears, Mere; 3rd and 4th (equal), W. Patchett, W. Hatliffe, Thoresway; v.h.c., Rev. H. F. Goffe, Thoresway; h.c., W. Cooke, Navenby.

Six 1-lb. Sections (Cottagers' Class) (six entries).—1st, W. Patchett; 2nd, W. Wells; 3rd, J. W. Rowston, Dunston.

Six 1-lb. Jars Extracted Honey (Cottagers) (ten entries).—1st, G. Edenborough, Branston; 2nd, W. Patchett; 3rd, Mrs. Hawley, Metheringham; 4th, J. W. Rowston; h.c., W. Wells.

Glass Super—over 10 lb. (eight entries).—1st, Tom Sells; 2nd, N. Duckering; 3rd, W. Wells; 4th, B. C. Blackburn.

Beeswax (six entries).—1st, J. Emerson; 2nd, Dr. P. Sharp; 3rd, W. Paulger, Scothorne; 4th, Tom Sells.

Two Shallow-frames Comb Honey (five entries).—1st, W. Wells; 2nd, Rev. H. F. Goffe; 3rd, Tom Sells.

(*Communicated*).

THE BRISTOL, SOMERSET, AND SOUTH GLOS. B.K.A.

ANNUAL SHOW AT KNOWLE.

The annual show, held at Firfield, Knowle, on July 21 and 22, in connection with that of the Knowle and Totterdown Flower Show, and proved to be one of the most successful ever held by the Association; the entries altogether numbering 100, as against

70 last year. The quality of the honey, too, was exceedingly good, especially in the classes for extracted honey, making the judging exceedingly difficult.

Lectures on advanced bee-keeping were given in the bee-tent of the Association to crowded and appreciative audiences.

Messrs. S. Jordan and J. Brown, who officiated as judges, made the following awards:—

Collection of Bee Appliances.—1st, Brown & Sons, Bristol.

Honey Trophy.—1st, G. W. Kirby, Southville; 3rd, W. A. Withycombe, Bridgwater.

Single 1-lb. Jar Extracted Honey.—(Open Class).—1st, G. H. Caple, Stanton Prior; 2nd, W. A. Withycombe; 3rd, T. Martin, Temple Cloud.

Single 1-lb. Section.—1st, E. S. A. Gough, Congresbury; 2nd, H. F. Jolly, Henbury; J. Fear, Timsbury.

Three Jars Extracted Honey (1 lb., ½ lb., ¼ lb.).—1st, G. H. Caple; 2nd, W. A. Withycombe; 3rd, C. Harris, Bower Ashton.

Twelve 1-lb. Jars Extracted Honey.—1st, T. Martin; 2nd, J. Fear; 3rd, R. Flower, Hinton Blewitt.

MEMBERS' CLASSES.

Collection of Honey ("Sale Class").—1st, G. W. Kirby; 2nd, W. A. Withycombe.

Twelve 1-lb. Sections.—1st, H. F. Jolly, 2nd, J. Fear; 3rd, C. Harris.

Three Frames of Comb Honey.—1st, G. H. Caple; 2nd, G. Jefferies, Pill; 3rd, G. W. Kirby.

Six 1-lb. Jars Extracted Honey.—1st, G. H. Caple; 2nd, R. Flower; 3rd, R. W. Moon, Bishopsworth.

Beeswax.—1st, R. Flower; 2nd. G. Jefferies; 3rd, F. Kirby.

Three 1 lb. Jars Granulated Honey.—1st, G. H. Caple; 2nd, G. W. Kirby; 3rd, R. Flower.

Collection of Bee Flowers.—1st, W. A. Withycombe; 2nd, F. Kirby.—(*Communicated.*)

HONEY SHOW, PEMBURY.

The eleventh annual show of honey was held at Woodsgate, Pembury, Tunbridge Wells, on Wednesday, July 19, in connection with the Cottage Gardeners' Flower Show.

The entries were not so numerous as wished for, probably owing to the rather adverse season in the district. Mr. S. Oaten, Tunbridge Wells, and Mr. G. Guest, Tonbridge, officiated as judges, and made the following awards:—

Honey Trophy.—1st, H. Beeching, Pembury; 2nd, H. Crowther, Pembury.

Twelve 1-lb. Sections.—1st, H. Beeching.

Six 1-lb. Jars Extracted Honey and Six 1-lb. Sections (*Open Class*).—1st, Rev. H. Goffe, Thoresway, Lincolnshire; 2nd, H. Beeching; 3rd, F. Lawrence, Pembury.

Messrs. James Lee & Son, Holborn, London, sent a nice and useful collection of appliances for view and sale. An observatory hive, with bees, was shown by Mr. H. Crowther, Pembury.—(*Communicated.*)

CAMBS. AND ISLE OF ELY B.K.A.

The annual show of the above Association was held at Cambridge on the 27th ult. in connection with that of the Cambridgeshire Agricultural Society, and being favoured with beautiful weather, the exhibition, although not a very pretentious one, was in all points a success. For the prizes in the eight classes comprised in the schedule there were sixty-four entries, and some very fine honey, both comb and extracted, was staged.

Mr. W. Broughton Carr judged the exhibits, and made the following awards:—

Six 1-lb. Sections (shown in enamelled cases).—1st, Miss Seamark; 2nd, Mr. Coxhall; 3rd, Mr. Barber; c., Mr. H. Seamark and Mr. Morley.

Six 1-lb. Sections.—1st, Miss Seamark; 2nd, Mr. H. Seamark; 3rd, Mr. Barber; v.h.c., Mr. K. Allen; c., Mr. J. Brown.

Twelve 1-lb. Jars Extracted Honey.—1st, Mr. F. Morley; 2nd, Messrs. Johnson & Son; 3rd, Mr. K. Allen; h.c., Mr. J. Barnes; c., Mr. H. Seamark.

Three Shallow-frames of Comb Honey.—1st, Mr. Coxall; 2nd, Messrs. Johnson & Son; 3rd, Mr. K. Allen; c., Mr. J. Barnes and Mr. H. Seamark.

Display of Honey.—1st, Mr. H. Seamark.

Beeswax.—1st, Mr. H. Seamark; 2nd, Mr. F. Morley; 3rd, Mr. J. Barnes.

Three 1-lb. Sections (open class).—1st, Mr. H. F. Beale; 2nd, Mr. H. Seamark; 3rd, Mr. J. Brown; v.h.c., Mr. T. Louth; h.c., Miss Seamark; c., Mr. K. Allen and Mr. A. Barber.

Single 1-lb. Jar Extracted Honey (open class).—1st, Mr. H. F. Beale; 2nd, Mr. T. Louth; 3rd, Rev. H. F. Goffe; v.h.c., Mr. Patchett; h.c., Mr. F. Morley and Messrs. Johnson & Son; c., Mr. W. Loveday and Mr. Patchett.—(*Communicated*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

INSECTS AND FLOWERS.

[3754.] The study of the relationship between insects and flowers is certainly of much interest to bee-keepers, and anything which has been established as the result of scientific observation on this subject ought to be gladly

welcomed. The exhaustive series of experiments conducted by Professor Plateau, of the University of Ghent, on the subject of the "Fertilisation of Flowers" may be a profitable contribution to the present discussion. Professor Plateau's studies have brought him to the conclusion that sight forms a comparatively small part in directing the insect's choice of flowers in comparison with scent. Until now it has been supposed that the blossoms, in order to attract the little visitors so necessary for the reproduction of the plant, not only gave forth their sweetest perfume, but also attired themselves in their gayest and most alluring garb for the same purpose. The experiments of Professor Plateau go to prove that bees are quite indifferent to the colours of the flowers they visit in search of honey, for he has covered over with bits of green leaves the gay petals of such bright-hued flowers as the dahlia, but the insects still continued their visits. Nor were they influenced by the absence of colour caused by removing the corollæ of the bright lobelia, foxglove, or evening primrose. The professor also tried the experiment of artificially providing with honey certain vivid flowers, such as the geranium, which seldom or never attracts bees, with the result that they were at once allured, passing over similar flowers not thus treated.

He then tried the experiment of removing the honey-bearing parts of the flowers, leaving only the showy outer petals. The single dahlia was used as an example, but the flower was neglected until a single drop of honey was inserted, when they came as before. Oddly enough, even flowers formed of green leaves, when honeyed, were rifled of their sweets.

According to the foregoing, it will be seen that what determines the visits of bees to flowers is the presence of nectar; it is not at all a question of colour blindness or antipathy to certain flowers of a special colour.

Like your correspondent, Mr. A. T. Johnson, I have read with pleasure a large portion of Mr. Hamlyn-Harris's article on the above subject. Mr. Harris would, I think, be more useful as a writer, if he would withhold from his writings on scientific subjects all matter of a controversial nature dealing with speculative theology. Personally, I hold opinions on this phase of the question which are diametrically opposed to those held by Mr. Harris, but a discussion of these differences would be entirely out of place in the pages of the British Bee Journal.—R. Whyte, *Glasgow, August* 5.

COMB-HONEY PRODUCTION.

WORKING SECTIONS BELOW SHALLOW-FRAMES.

[3755.] In his letter (3733, July 13, p. 271) "E. P. G." expresses the opinion that working sections under shallow-frames is impracticable. My experience is to the contrary. For several seasons I was so much troubled with swarming that last year I tried two hives by starting in shallow-frames, and, when partly worked out, putting an empty rack of sections underneath as described by Mrs. Barber in your issue of May 18. The result was so encouraging that this season I have treated twenty-five colonies in the same manner and find not only that the method is practicable, but also that the yield of honey is considerably greater. I have taken off ten shallow-frames and forty-two sections from one hive. Further, swarming and loafing are reduced to a minimum, for out of the twenty-five hives I have had only three swarms. In the editorial note, page 291, the question is put "Why—if 'E. P. G.' finds no difficulty in inducing bees to enter sections—take any further trouble in the matter?" My answer is that by the method described the result fully compensates for the extra labour, as the take of honey is greater and of superior quality both in section and extracted. It would be interesting to hear the experiences of others who have followed out the plan, and those to whom it is new. I should strongly advise careful consideration of the matter with a view to taking it up next season.—C. Pack (Gardener to C. Hammerton, Esq.), *Goldings, Horsham, August* 2.

NOTES FROM THE WEST.

[3756.] *Solar Wax Extractors.*—That the "solar" has come to stay in our apiaries is apparent from the various forms of this appliance one sees rigged up in different gardens where bees are kept, and their owners are readers of the B.J. Mine is of the bell-glass type, and a real good one it is. Every day recently I have put inside a pile of "cappings" after being cleaned by the bees from the extractor, and each evening has given me the resultant lump of beautiful wax. Besides, what a labour-saving apparatus! I can tell by the glow on my better half's countenance that she mentally contrasts the nightly cake of amber to the boiling, spluttering "mess" of other days, when all the utensils of a family kitchen were brought into requisition.

Price of Honey.—While I do not think the B.B.K.A. could materially influence the market, because of the great variation in price which obtains in different districts, yet I *do* think that bee-keepers' associations could do a great deal towards a levelling up of things. If a honey depot was established by each association where members could send their surplus, and have it graded and sold by a duly appointed agent, and also have a recognised price, it would, at least, tend to make things a trifle easier than at present. To sell beautiful run honey at 5d. per lb. and sections at 6d. each is certainly a bit below par.

Bees v. *Colour.*—There is not much doubt in the minds of bee-keepers as to which, whether scent or colour, has the greater attraction for the bees, and if Mr. Hamlyn-Harris has any

doubt about it let him try the experiment of placing some section loosely in a closed shed, leaving only a crack or two for bees to enter, and then place round about the shed all the most lovely and fragrant blooms possible, and I venture to suggest that if he were expecting those sections to win his next prize, he would soon be sadly disappointed. I left some the other day in a shed quite a quarter of a mile from the nearest bee-hive, and although the shed was surrounded by tempting blooms of various bee-flowers, yet I soon learnt what it was to have sections demolished, while not a bee touched the blooms, and all occurred within about thirty minutes.

Light Honey.—Can any one tell us how it is that at nearly every small show where honey is judged the public are encouraged to believe in honey on the sole question of colour. It is getting rather annoying to see judge after judge at our small shows giving prizes according to colour, and thereby teaching people to believe that honey *must* be superior because of being light or amber, while another has to be abandoned because of being darker.—AMATEUR, *Totterdown, Bristol, August* 7.

[We scarcely think it needs much experience either in judging or tasting honey to arrive at the conclusion that—as a rule—there is no comparison, so far as quality, between what are known as light and dark honeys. This is acknowledged by the great majority of honey-producers and honey-sellers the world over. The one exception to this rule is heather honey; but for the rest, it may be taken for granted that while *all* light honeys are not good, the best samples of the product are *always* light in colour.—EDS.]

DRIVING BEES FROM BOXES.

[3757.] In the foot-note to my letter on page 282 the Editor says:—"It will be interesting to know what happens to the old boxes removed to a fresh stand" when the hatched out brood is driven? I shall adopt one of two courses. I may extract the honey and melt the comb, but probably the honey would be inferior—the comb being very dark, so it is more likely I shall run driven bees in for the winter, then in the spring transfer to a frame-hive, tying the combs of brood into frames and gradually work out the same by introducing full sheets of foundation.—ALPHA, *Hull.*

THE CULTIVATION OF BEE PLANTS.

(*Concluded from page* 305.)

[3738.] In the early spring, however, all this is changed. Sometimes for weeks together keen, cold east winds sweep round the apiary with pitiless severity, especially where it is at all exposed, and with their petrifying blasts they paralyse in a few minutes every bee that ventures out into them. Even now one feels inclined to shudder at the recollection of the past two springs, when one has had to resort to feeding right through May, and with the bees scarcely increasing at all, my apiary being fully exposed to the north-east wind, which blows fresh off the sea. Any means that can be devised to prevent spring dwindling (which always occurs in any of my colonies that are not over-strong in unfavourable springs), and build the bees up early, especially where there is an early flow of honey to be considered, is of the greatest value, and I believe that the natural stimulant produced by the cultivation of early spring flowering bee-plants in sheltered spots in and around the apiary will attain this valuable end in a way that nothing else can. No amount of syrup will pick up a weak colony in the spring like a little new honey and pollen from the sycamores and dandelions, the gentle natural activity produced by this being most beneficial. Also when forage is close at hand the bees are prevented from searching for food further afield at a time of year when it is extremely perilous to venture far, and thus the lives of many old bees and wear and tear on the lives of younger ones are saved. Besides, in a large apiary, if the bees have something to do there is less likelihood of robbing, which is sometimes quite troublesome in the spring. I believe that in many apiaries situated in the open country it would really pay to cultivate early spring flowering plants for the bees. I have done so in my apiary for some years past with very satisfactory results. I have found that a great deal depends on the plants chosen; some that are often recommended being almost worthless while others are of great value. I think white arabis deserves a place at the top of a list of these plants. It flowers profusely from February to May, and is always a great favourite with my bees. It is a perennial, and when once established will go on from year to year with no attention beyond being dug round and pulled about after flowering. Owing to its dwarf habit, it is particularly suited for planting around hives, and the masses of white bloom enable the bees to easily identify their respective hives in windy weather—a point of merit of no small importance if you want to keep valuable queens in an exposed apiary.

Other good early spring flowering bee plants are the following:—

Lamium purpureum (wild—seed).
Wallflower (plants).
Winter aconite (roots).
Crocus (bulbs).
Dandelion (wild—seed).
Phacelia tanaceti folia (seed).
Limnanthes Douglasii (seed).

Very soon will be the time to sow or plant out most of these, and the ground should be got ready now. If any bee-keeper who has found any plants not given in the above short list to be *really useful* for bees in early spring, I should be very much obliged to him for the names of them in order to complete my list.—F. W. L SLADEN, *Ripple Court, Dover.*

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Our bee-garden picture this week shows a portion of the apiary of Mr. George Smith, a small holder of farming land in the rural district of Princes Risboro', bordering on the hamlet of Bledlow, and the historical "Chilterns," the scene of many a fierce fight in the days of Cromwell.

We understand that Mr. Smith has for many years taken a lively interest in bees and bee-keeping in a small way; but lately, in view of the depressed condition of agriculture, has developed his hobby to a considerable extent, realising the fact that for the proportionate outlay and time involved bees are more remunerative than the ordinary farming of to-day. Regarding the actual experiences of bee-keeping our friend says:—"My earliest recollection of bee-keeping carries me back a good many years, and to the days when few cottages in this district were without their accompanying number of straw skeps and red clay hoods in the adjoining piece of garden ground, and I well know that the owners found the annual yield of honey to be very often considerable. The heather-clad Chiltern Hills—which can be seen from this spot—form an excellent source of honey gathering, after the first harvest from the meadows and clover fields by which we are surrounded has ceased to yield for the year. Since my younger days many of the old bee-hands have, I regret to say, died out, and with them the skeps of bees without which few cottage holdings were considered complete. For my own part, however, I think that in an industry of this kind there is great scope for development. At the beginning of this year my apiary numbered about a score of stocks, but I have since added a number of the latest type of hives to my small farm. It is my intention to work chiefly for comb-honey in sections, as I find this more in demand than extracted honey. I have found no great difficulty in getting the bees to work in sections, but I make a point of keeping the section-racks well covered with warm quilts, finding that the bees like warmth when honey-storing. I must also acknowledge the great help I get from the British Bee Journal, and would not be without it for anything. My neighbours in the farming line are getting interested in my new venture, and I think, if this season's work proves successful, more farmers of my own class will be following it up next year. The part of apiary seen in the photo faces south, and is sheltered by a boundary hedge, with the farm buildings and barns in the rear."

MR. GEORGE SMITH'S APIARY, PRINCES RISBORO', BLEDLOW, BUCKS.

We wish our friend success in his undertakings, and hope to hear more from him later on.

SAD MISADVENTURE

TO THE WIFE OF A BEE-KEEPER.

We deeply regret having to record the death, under very sad circumstances, of Mrs. Chapman, wife of Mr. F. Chapman, The Dairy, Wells, Somersetshire, well known as a successful bee-keeper and exhibitor. It appears that on the evening of Wednesday, the 19th ult., Mr. Chapman, who is an expert of the county B.K.A.—accompanied by his wife and sister—went, by request, to the Lunatic Asylum, Wells, to inspect the hives there. One of the medical officers (who is himself a bee-keeper) accompanied them to the apiary, and nothing unusual occurred while the hives were being examined. This done, the party returned indoors. A bee apparently followed them in, for while in the corridor the insect got into Mrs. Chapman's hair; she became somewhat alarmed, and, as might easily happen under such circumstances, the bee stung her on the head. This further increased Mrs. Chapman's excitement, but the sting was extracted, and the party all walked down the corridor into one of the wards; here Mrs. Chapman fell into a faint, and, notwithstanding the joint efforts of the medical officer and her husband, she never recovered consciousness, but died in about ten minutes.

We are sure the heartfelt sympathy of all readers will, along with our own, be extended to Mr. Chapman in a bereavement so sudden and unlooked for, especially as his wife had assisted him among the bees for several years past, and, though known to have a weak heart, no danger was feared from that cause.

In order to remove any misapprehension likely to be aroused by more or less accurate accounts of the sad affair in the newspaper Press, we print the following extracts from the evidence given at the inquest held on the unfortunate lady's body on Friday, the 21st ult., before Dr. Craddock (Coroner) and a jury:—

The medical officer, the substance of whose evidence is embodied in the facts mentioned above, said "he had made a *post mortem* examination, and found that she had disease of the aortic valve of the heart; this was of very long standing, probably the result of rheumatism years ago. The valves were thick and contracted, and quite incompetent. He found no other bad symptoms. Death was due to heart failure, caused by shock and excitement following a bee sting. Death was by no means due to the actual poison of the sting.

"The Coroner briefly summed up. He said it was an exceedingly sad case and almost unique.

"The Coroner went on to say that he had never in his practical experience had a case of that kind before. The medical testimony showed that deceased had a very serious disease of the heart, and that the actual cause of death was due to deceased's fright at being stung, acting adversely upon the lesion. There was very little time to do anything, but what could be done was immediately done to restore circulation, but without avail. There was never the slightest sign of recovery, deceased dying in less than ten minutes. He could only recommend them to return a verdict in accordance with the medical testimony.

"The jury found a verdict to the effect that deceased died from heart failure caused by shock, following a bee sting.

"The Coroner said he had never seen a case of that kind before, where death seemed to result from so trifling a thing.

"It was also stated in evidence that the deceased had lived for ten years amongst bees. She walked up to the asylum in the evening.

"The Coroner observed that walking was the very worst thing for her in her state."

This concluded the inquest.

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING AUGUST 5, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
July 30....	30·25	69·6	82	55	27	67·6	—
,, 31....	30·47	67·1	83	50	33	65·3	—
Aug. 1....	30·47	75·0	86	51	35	67·5	—
,, 2....	30·30	73·2	86	51	35	67·5	—
,, 3....	30·13	68·2	76	58	18	66·5	—
,, 4....	30·10	65·2	75	55	20	64·4	·01
,, 5 ...	30·06	67·5	75	55	20	64·4	·01
Means	30·25	69·3	80·4	53·6	26 9	66·2	·02*

* Total, ·02 in.

Mean vapour tension, 0·437 in.; mean relative humidity 62 per cent.; mean temp. of the dew point, 55°·2. The rainfall, viz., ·02 in., =452·46 gallons, or 2·02 tons to the acre, or 1·6 oz. to the square foot. For the week ending July 29, the mean temp., viz., 61°·7, was +0°·3, and the rainfall, viz., ·20 in., was −·47 in. The mean temp., July 2 to July 29, viz., 63°·7, is +2°·7, and the rainfall, viz., ·63 in., is −1·74 in. The rainfall, January 1 to July 29, viz., 11·04 in., is −2·27 in.

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, DURING JULY, 1899.

Barometer.

Highest, 30·47 in., on the 31st.
Lowest, 29·48 in. on the 2nd.
Range, 0·99 in.
Average height, 30·05 in.

Thermometer.

Highest Max. Shade Temp., 85 deg., on the 19th.
Lowest Max. Shade Temp., 59 deg., on the 2nd.
Highest Min. Shade Temp., 61 deg., on the 11th, 12th, 20th, 21st, and 26th.
Lowest Min. Shade Temp., 46 deg., on the 5th.
Range, 39 deg.
Greatest Daily Range, 33 deg., on the 31st.
Least Daily Range, 4 deg., on the 22nd.
Highest Shade Temp. at 9 a.m., 78 5 deg., on the 12th.
Lowest Shade Temp. at 9 a.m., 55 deg., on the 2nd.
Highest Mean Daily Temp., 71·6 deg., on the 19th.
Lowest Mean Daily Temp., 54·7 deg., on the 2nd.
Mean of Highest Daily Readings, 74·4 deg.
Mean of Lowest Daily Readings, 54·4 deg.
Mean of Daily Range of Temp., 20·0 deg.
Mean Temp. of the Month, 64·4 deg.

Mean of Dry Bulb Readings, 65·7 deg.
Mean of Wet Bulb Readings, 59·7 deg.
Mean Vapour Tension, 0·436 in.
Mean Relative Humidity, 69 per cent.
Mean Temp. of the Dew Point, 55·2 deg.

Rainfall.

Number of days on which ·01 in. or more fell, 10.
Greatest Fall in 24 Hours, 0·41 in. on the 1st.
Total Fall in the Month, 1·04 in.
Total Fall in the Year, 11·04 in.
The rainfall for the month, viz., 1·04 in., is −1·67 in., and for the year, viz., 11·04 in., is −2·52 in.

FRED. COVENTRY.

Duddington, Stamford.

WEATHER REPORT.

WESTBOURNE, SUSSEX.
JULY, 1899.

Rainfall, 1·91 in.
Heaviest fall, 1·25 in., on 23rd.
Rain fell on 10 days.
Below aver., ·86 in.
Maximum Temperature, 83°, on 20th.
Minimum Temperature, 44°, on 14th.
Minimum on Grass, 38°, on 2nd.
Frosty Nights, 0.
Sunshine, 309·8 hrs.
Brightest days, 8th and 19th 15 hours.
Sunless Days, 0.
Above average, 94 hours.
Mean Maximum, 72·1°.
Mean Minimum 54·6°.
Mean Temperature, 63·3°.
Above average, 3 6°.
Maximum Barometer, 30·65°, on 31st.
Minimum Barometer, 29·65°, on 1st.

L. B. BIRKETT.

Queries and Replies.

[2249.] *Brood-combs Filled with Honey.*—Kindly advise me if it is any use leaving supers on hives now that so little honey is being gathered in this district? As very little work seemed to be going on, I removed a partly-filled super from one of my hives a few days ago, and observing the bees hanging outside to-day, as though crowded out, I examined the body of the hive in order to ascertain the cause, when, to my surprise, I found every frame filled with honey. I took out the back frame and replaced it with an empty frame, thus giving a little more room for the bees. 1. Did I do rightly? 2. Would it be well to return the super, in spite of the honey season being (I presume) nearly at an end, in order to give the bees more room and scope for carrying on work instead of hanging about idly on the alighting-board?—T. E. P., *Haverstock Hill, N.W., August* 1.

REPLY.—1. Quite right under the circumstances. 2. It would do no good to return super unless several of the central combs in brood-nest had the cappings removed before replacing it. If this were done it is possible (but not certain) that the bees will carry some of the honey stored below into the super, and might thus complete it. On the other hand, if the combs in super are only partly built-out, the chance of its being completed are about *nil*. We should, therefore, in the latter case, remove two or three of the honey-clogged combs and replace them with full sheets of foundation. By this means you may get some new combs built, thus utilising the bees' time, and the removed combs will be useful in the autumn as stores.

[2250.] *Young Queen Ceasing to Lay.*—Will you kindly give me the benefit of your great experience with respect to the behaviour of a young queen in one of my hives, for, although a close reader of the B.B.J. for more than fifteen years, I do not remember to have seen a similar case mentioned. The queen referred to was hatched on June 18, and two days afterwards I put her into a strong nucleus colony. She mated all right, and began to lay on June 29. A week later—*i.e.*, July 6—one comb was nearly filled on both sides with eggs or larvæ. It would appear that no eggs were laid after about July 3 or 4, seeing that all brood in the combs had hatched out by July 24. On examining several times since, I found the queen looking quite right, but she had produced no eggs up to last time I inspected the combs on July 31. Now, if the queen has got hurt, I am at a loss to know how it has occurred, as I have had not a little experience, besides being most careful when manipulating. I have also reared many queens before, but never had one to act as this. I have written at some length, being anxious that you should understand the case. The questions I would ask are:—1. What do you think is the cause of leaving off laying? 2. Is there any likelihood of commencing again? 3. Can I do anything to help matters, or would it be best to do away with the queen?

The honey flow has been favourable, notwithstanding some cold weather in May—for June and July made up for it—but is now nearly over. White clover, though blooming late, has flowered very profusely, and the limes (of which we have a great many hereabout) were a splendid sight when in full bloom. The bees worked well on both white clover and the limes, so that I have a very good "take" of honey this season. Several of my best stocks yielded over 100 lb. of surplus each, while the colour and flavour of the honey are excellent—the best I have had for several seasons.—"NEW SOWERBY," *Grantham, July* 31.

REPLY.—1. There can be little doubt that the sudden stoppage in egg production is due to rupture of some kind. 2. Very little if the "stoppage" is complete. 3. The only thing is to requeen the stock. If you like to send the queen on, we will settle the point as to rupture by microscopical examination.

[2251.] *Bees Storing in Hive Roof.*—I am in rather a difficulty about some bees, and think perhaps you will be able to help me through the B.B.J., of which paper I am a constant reader. A few days ago I was helping a

gentleman to remove some honey from a hive. It was the first "take" this year, and every section was quite full, in fact the bees had filled in every possible space in the hive with honey, and had already built a large quantity of comb in the roof of the hive. They managed to do this by making a way for themselves through a small hole in the roof. I took out sections and put in new ones, as the stock was *unusually* strong, but was not sure what to do with the comb in the roof, as thousands of bees appeared to visit it, and I was afraid to stop up the hole in case the bees, finding no entrance, should get lost. I advised the gentleman to leave the comb till the end of the season before removing it, as it is sure to contain a fair amount of honey. I should be glad to know if I did right. There appeared to be only worker bees, as far as I could tell, in the roof; so do you think *all* in the hive were the same colony or not? Personally I think *not*, as great quantities were going in at the proper entrance. I smoked the others several times, but it was of no use. Directly I left them, back they went in larger numbers than before almost. Of course, it must be understood that there can be scarcely any room for storing in the hive. I should be glad to know what you think, also what would be the best to do with the bees. The gentleman in question has several hives, which appear in splendid condition, and are crowded with bees. They have been left much to themselves, the brood-chamber having never been interfered with for years, and the bees are never fed in winter. So I consider they have done unusually well.—(Miss) A. B., *Colwyn Bay, N. Wales, August* 5.

Reply.—If you stop up the passage way through hole in roof, the bees will use the proper entrance to the hive without any getting lost. We assume, of course, that there is a free passage-way from the body of hive into roof.

[2252.] *Dark Honey for Feeding Bees—Italianising Stocks.*—I shall be away from home in September, and having lately observed that some of my hives are very short of food, I am led to ask: 1. Can I begin feeding now, and what is the best and safest way? 2. I have a quantity of last year's honey, or it may be honey-dew. Can I utilise that for feeding bees, and, if so, in what manner as regards mixing with water or not? 3. In order to have as little trouble as possible with my neighbours over my bees, I am going now to re-queen my five hives with Italian queens. Is there no other way than by searching for the old queens and removing them by hand, and then introducing the new queen? If there is I shall be very glad to learn, as I am quite a new hand.—X. Y. Z., *Tooting.*

Reply.—1. Feeding may begin at any time. A large glass jam-jar makes a good feeder, by covering its mouth with twilled calico. 2. If the dark honey is still liquid, thin it down with hot water to consistency of thin syrup. 3. No easier way that we know of.

Echoes from the Hives.

Southill Park, Biggleswade, July 28.—My bees came through the winter strong and well, but the spring was so cold and late that stocks required looking after. My first swarms came off on May 29, then after an interval of rest for about ten days when I had more swarms than I cared for, as I work chiefly for sections, of which I usually begin to take off the hives in May, but this year owing to the peculiar season I got no finished sections, not before the middle of June. However, I have up to date taken sixty-three 1-lb. sections from each of my best three stocks. These three hives have respectively having ten, nineteen, and twenty standard frames in the lower part of hives for brood and honey for extracting. The honey this season so far is very good, and I have not seen a single cell filled with honey-dew. Clover and limes are now over, but bees are gathering from sweet chestnuts and blackberry.

There are hollow trees in the park here which have been occupied by the bees for a long time, and which I think must this year have sent out a lot of vagrant swarms, several having been reported for a week or more when the weather was so hot.—G. Johnson.

Ladock, Cornwall, July 27.—I saw a reference made in last week's B.J. (page 289) to glass of honey, weighing 30 lb., shown at the Yorkshire show at Hull. It is not often I am beaten in that line, so I took one that I have got this year to be weighed, and it scaled 31 lb. What do you think of that for the "Old Cornish Skeppist"?

[Some folks would say "Good old Skeps," but we simply congratulate our old friend.—Eds.]

I don't know what is meant by "Lee's Crystal Palace Super," but I suppose it means a bell-glass of some kind, and this is the super I work on my skeps. I took one such the other day and got about two quarts of honey from the combs, while the bees are working away like Britons at another glass. I would like you to let our skeps have a word in the B.J., you know.—M. C. ("The Old Cornish Skeppist").

[If "M. C." will refer to page 209 of our issue for June 1 last, he will learn all about the super mentioned, and we are very pleased to let his success with skeps "have a word in B.J."—Eds.]

Honey Cott., Weston, Leamington, August 4.—We have about come to the end of our honey harvest, and I may say it has been a curious season altogether, with great variations of temperature. There is, however, great cause for satisfaction that we have got some very nice honey, and no sign of honey-dew like last year. I have found that my "bait" sections were the first to be filled and sealed over again this year.—John Walton.

Bee Shows to Come.

August 16 and 17 in St. John's School-room, Blackpool.—Annual Show of the Blackpool and Fylde Horticultural Society. Exhibition of honey under the auspices of the Lancs B.K.A.

August 17, at Goole.—Bee and Honey Show in connection with the Goole and District Agricultural Society. Six open classes, including one for single 1-lb. jar (entry free). Schedules from J. Luddington and N. S. White, Secs., Lindum House, Goole. **Entries close August 12.**

August 18, at Exeter.—Devon B.K.A., Second Annual Show of Bees, Honey, Hives, and Appliances, in connection with that of the Devon and Exeter Horticultural Society. Ten open classes. Schedules from Mr. H. Tolson, Park House, St. Thomas, Exeter. **Entries close August 12.**

August 19 at Windsor.—Annual Flower and Honey Show of the Windsor and District Liberal Club. Five classes open to all. Schedules from the Secretaries, Messrs. J. Hyde and H. Sloane, 19, Peascod-street, Windsor. **Entries close August 11.**

August 23, at Falloden.—Honey Show, under the auspices of the Falloden and District Horticultural Society. Open class for two 1-lb. sections and two 1-lb. jars extracted honey. Schedules from Mr. A. S. Welsh, Secretary, Embleton, Christon Bank, R.S.O.

August 23 and 24, at Shrewsbury.—Shropshire B.K.A. annual Show in connection with the Shropshire Horticultural Society's great Fête and Exhibition. Open classes for hives, appliances, honey, &c. Schedules and entry forms from Mr. Jno. Palmer, 17, Brand-lane, Ludlow. **Entries close August 14.**

August 25 and 26, at Dunfermline, N.B.—Bee and Honey Show, West of Fife and District B.K.A., in connection with the Horticultural Society. Schedules from Geo. Weston, Sec., Grant's Bank, Dunfermline. **Entries close August 22.**

August 29 at Northwich.—Cheshire B.K.A. Show, in connection with the Cheshire Agricultural Society. Open classes for honey, wax, and single hives. Schedules from Mr. T. A. Beckett, St. Werburgh's Chambers, Chester. **Entries close August 8; at double fees August 15.**

August 30 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 23.**

August 31, at Abergwili.—Honey Show in connection with the Horticultural Exhibition. Open classes for single 1-lb. jar; prizes, 10s., 7s. 6d., 5s., 2s. 6d. And single 1-lb. section; prizes, 7s. 6d., 5s., 2s. 6d. No entry fee. Schedules from J. Jones, 3, Gifre-gardens, Abergwili. **Entries close August 26.**

August 31, at Bradford Abbas.—Yetminster District B.K.A. Annual Show in conjunction with the Bradford Abbas Flower Show. Open classes for Single 1-lb. Sections, four prizes (entry free), and for Best Frame-hive, two prizes (entry fee, 1s.).—Schedules from G. Leeding, Hon. Sec. B.K.A., Bradford Abbas, near Sherborne, Dorset. **Entries close Aug. 26.**

September 6 and 7 at Birkenhead.—Cheshire B.K.A. Show, in connection with the Wirral and Birkenhead Agricultural Society. Liberal prizes for hives, honey, &c. Eight classes, including one (free entry) for 1-lb. jar of honey with four prizes. Honey tent in good position in show yard. Bee lectures and demonstrations. Schedules from Mr. Edwardson, 6, Hamilton-square, Birkenhead. **Entries close August 23.**

September 7, in the Town Hall, Castle Douglas.—Annual Show of the Galloway Horticultural and Honey Society. Open classes, with liberal prizes for three 1-lb. jars, and for three 1-lb. Sections. Schedules from Mr. Thos. Myers, Castle Douglas, N.B. **Entries close September 2.**

September 13 and 14 at Derby.—Eighteenth annual show of the D.B.K.A., in connection with that of the Derbyshire Agricultural Society. Eight open classes, including two with free entry for 1-lb section and 1-lb. jar of honey. Schedules from F. Walker, hon. sec. D.B.K.A., 64, Gerard-street, Derby. **Entries close August 31.**

Notices to Correspondents & Inquirers.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

A. D. (Lichfield).—*Buying Italian Bees.*—1. It is a mistake on your part to say the "Guide Book" recommends purchasing Italian queens in Switzerland. The words on page 132 are :—"purchase an imported one of some reliable dealer, who can guarantee her purity." 2. The only explanation we can offer of non-delivery of small swarm and queen ordered on July 12 is that the question of *carriage* has not been settled. The advertisement distinctly says :—"carriage to be paid by buyer," and the sum sent by you does not include carriage. Why not send reply post-card asking what carriage amounts to and remit the amount?

ENTHUSIAST (Handsworth). — *Varieties of Heather.* — Illustrations of the several varieties of heather appear on page 361 of B.B.J., vol. 24, with full description of each kind. Copies of the number may be had from this office for 1½d. in stamps.

HY. BESWICK (Norfolk).—*Inspected Comb.*—No disease in comb, but it is so old and black as to need renewing badly.

B. M. I. (Isleworth). — *Transferring from Skeps to Frame-hives.*—1. So far as profit from the "three old skeps (purchased on May 29), Nos. 1 and 2 have done moderately in yielding you 24 lb. of comb-honey up to July 8. No. 3, though giving 4 lb. of surplus up to July 24 is less satisfactory; but we do not advise transferring bees and combs of old skeps to new frame-hives. Far better to have new and good straight combs built in the frames; besides, as you are a beginner, and have had no experience in transferring, we must again state that a good "Guide Book" of some sort is indispensable if success is to be hoped for in bee-keeping. Full instructions would occupy too much space in this column, and, apart from this, we cannot possibly hope to teach bee-keeping to individual correspondents in a weekly journal like ours.

"S." (Horsham).—*Source of Honey.* — The section reached us with glass smashed and comb broken out. A single section rarely travels safe by parcel post, even though in a

tin section-case, unless very well packed. Honey seems of about third-grade quality, and is from mixed flowers, there being no characteristic flavour to indicate its source.

F. PIESLEY (Lanark).—*Queen Killed and Thrown Out of Hive.*—It is not certain that the dead queen belongs to the hive where found. She may be an adult, but, having evidently been badly "balled," it is not easy to define her age. An examination should be made before taking the stock to the moors to make certain as to queenlessness, because it may either have been an alien queen from another hive or a case of the bees balling their own queen.

A. F. W. (Birmingham).—*Size of Jars for Showing Honey.* — All properly worded schedules allow for a little variation in capacity so far as weight of contents, so that the limit of size means nothing beyond using jars the honey in which approximates to 1 lb. in weight.

B. W. (Isle of Wight).—Comb is affected with foul brood ; not of long standing to judge by sample, but other combs in same hive may, of course, point to a different conclusion as to date of outbreak.

G. H. B. (Cheltenham).—There is foul brood in sample.

T. L. H. (Surrey).—Honey sample No. 1 is good in colour and consistency and very fair in flavour ; it is from mixed flowers, no special flavour fixing the source. No. 2 is not by any means all from the lime ; and the "something else" in the flavour which you name is from some flower or combination of flowers that makes it impossible to recognise it. The flavour, however, cannot be called bad.

G. S. (Andoversford).—Sample of foundation sent is, we believe, Messrs. Root's make, and is of good quality.

B. W. (W.C.).—*Location for Bee-keeping.*—A small advertisement in our "Prepaid" column would probably secure you some information on the point. Meantime, *vide* advertisement of Land for Sale in our issue of July 20.

H. J. S. (Woking).—*Varieties of Heather.*—The best variety for honey is the common ling (*Calluna vulgaris*). See reply to "Enthusiast." The sprigs of heather mentioned were not enclosed in your note, but the illustration referred to will make clear the point of variety. It would certainly be advantageous to get the bees on to the common where heather is so abundant if the season is not too nearly over to warrant the expense and trouble. We advise a personal vist to the forage ground, and if bees are found working well on the heather bloom, it may be worth taking the hives out for a fortnight.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

HONEY, three cwt. FOR SALE, 56s. per cwt. Address, FRED PEPPER, Manea, Cambs. 357.

STRONG 3-FRAME NUCLEI; '99 Queen, tested; 10s. 6d. WOODS, Normandy, Guildford. 367

DRIVEN BEES, 5s. a stock on rail. PHILLIPS, Bredicot, Worcester. 354

FOR SALE.—Beautiful 1-lb. SECTIONS of HONEY. Mrs. CRUIKSHANK, Sandridge Vicarage, St. Albans. 356

A FEW BUILT-OUT COMBS, shallow frames for the heather, 5s. dozen. F. D. HILLS, East Cowes. 365

PROLIFIC QUEENS, Nuclei, Stocks (Skeps and Frame Hives), and Swarms. E. WOODHAM, Clavering, Newport. Essex. 363

WANTED, CLOVER HONEY. Sections and extracted. Send sample and price per cwt. COLLINGE, Leyland, Preston. 366

FERTILE QUEENS FOR SALE. Age not known. Bought with bees last year. 2s. 9d. each. LAMB, Mill Hill, N.W. 372

THREE fine Cyprian QUEENS FOR SALE. Just arrived. 8s. each. HOWES, Melton House, Knowle, Bristol.

WANTED, HONEY (good). Exchange new appliances, foundation, &c., or cash. O., 2, Cameron-road, Christchurch. 373

TWELVE STOCKS of BEES FOR SALE, in bar-frame Hives, standard size. Purchaser to pack and fetch them away. What offers? Apply, J. BURGESS, Church Cottages, North Mymms, Hatfield, Herts. 371

CHOICE YOUNG QUEENS from docile, prolific, and industrious stock, 3s. 9d. Delivered safely in introducing cages. Reduction on quantity. Circular post free. EDWARDS, "Beecroft," Ashford, Staines. 370

23RD YEAR.—Small SWARMS, with fertile Queens, 5s. 6d.; Three-frame NUCLEI, with Bees, Queen, and Brood, 12s. 6d.; LAYING 1899 QUEENS, 3s. 9d. Delivered. ALSFORD, Expert, Blandford. 369

DRIVEN BEES of my Superior Strain, 7s. 6d., packed free. Three-frame Nucleus, 12s. 6d. and 15s. Shallow Frames of Comb, 1½ thick, 5d. each. JOHN WALTON, Honey Cott, Weston, Leamington. 355

STRONG three-frame Nuclei 1899, tested QUEENS, 10s. 6d. each; fine tested 1899 Queens, 3s. 6d. each. Safe arrival guaranteed. BEES 1s. 6d lb. for 5 lb. lots or over, with queens. Guaranteed healthy. Packages to be returned. WHITING, Valley Apiaries, Hundon, Clare, Suffolk. 368

HEALTHY DRIVEN BEES, in 5 lb. lots, 5s. 9d.; single lots, 3s. each. Boxes returnable. Satisfaction and safe arrival guaranteed. Also good, reliable QUEENS from driven stocks, 1s. 6d. and 2s. each. Give trial. Approval. SPEARMAN, Colesbourne, Andoversford. 364

DRIVEN BEES, with Queen, 4s. 6d. per lot. Boxes returned. MORETON, Leigh, Worcester.

SECTIONS, 7s. doz.; best, 8s. LING, Shady Camp, Linton, Cambs. 348

ENGLISH MADE HONEY JARS (1-lb. screw-cap), 14s. per gross; sample, 6d. JAS. DYSON, Stainforth, Doncaster. F.N.

Editorial, Notices, &c.

HEATHER BEE FORAGE.

HONEY-PRODUCING HEATHERS.

The number of inquiries received during the last week or two having reference to the several kinds of *Ericas* or heather indigenous to this kingdom, serve to show in a marked degree the increased interest taken by our readers in this particular source of the native honey-supply. This being so, it becomes necessary that a proper understanding should be arrived at by bee-keepers who purpose sending their bees to the moors, regarding the respective honey-yielding values of the several varieties of heather, in order that bees may not be taken to places which (though "heather grows there") will yield no profit to the bee-keeper.

We are sorry not to have had sufficient indications earlier in the season how great an amount of interest would be evinced in the subject, because it is now too late to inform those who have made mistakes in their estimate of prospective results, either by sending their bees to the wrong forage-ground or by failing to send them to the right one. In view, therefore, of the future, and as a reply to many inquiries sent with specimens of the heather growing in the several localities, we deem it well, in order to meet the views expressed above, so far as showing the several kinds of *Ericas*—and by way of saving trouble to ourselves while conveying useful information to readers—to give illustrations, together with authoritative botanical descriptions of the three kinds of *Erica* (commons or heaths) usually found on the hills and moorlands of these islands. We place them in their order of merit as honey-producing plants, but bearing in mind that as *E. tetralix* (Fig. 3) grows only on damp bog-land, it cannot be regarded as of any practical value to the bee-keeper. The enlarged blossom of each variety, together with illustrations of the anther, stigma, pollina, &c., at sides of each cut, are introduced to make plainer the structural parts of the flower and its fertilisation by bees.

Fig. 1.—Erica, or Calluna, vulgaris. (Ling.)

Fig. 2.—Erica cinerea, or Bell Heather.

Fig. 3.—Erica tetralix.

1. *Erica, or Calluna, vulgaris* (Ling). Fig. 1.—A low, straggling shrub, seldom growing more than a foot high. Leaves very small and short. Flowers small, and of a purplish pink colour, often pale approaching to white. *Erica vulgaris* is the most widely-distributed of all the heaths and very abundant.

2. *Erica cinerea* (Scotch heath), Fig. 2. —More bushy and fuller than *Erica vulgaris*, leaves finer and more pointed, usually three in a whorl, with clusters of small leaves in their nails. Flowers a reddish purple, in twice terminal racemes. Covering immense tracts of country on the Scotch, Irish, Welsh, and some of the Western English moors.

3. *Erica tetralix* (Crossed-leaved Heath) Fig. 3.—Generally lower than *E. cinerea*

bushy at base; short, erect flowering bunches, leaves in form shorter and less pointed than in preceding. Flowers rather larger and more pink in colour, forming little terminal clusters or close umbels. Ranges all over Britain, and very common in the West.

By preserving these illustrations, readers will be enabled to distinguish between the several heathers by comparing a sprig of bloom with the cuts. Elevation and soil, however, has apparently much to do with the quality of heather honey, that from the Scottish Highlands being very superior if not actually the best of heather honeys, though, perhaps, a little too pronounced in flavour and aroma for some southern palates.

ROYAL LANCASHIRE AGRICULTURAL SOCIETY'S SHOW AT LIVERPOOL.

Under the auspices of the Lancashire County Council, a show of honey hives, &c., with lectures and demonstrations of bee-keeping, was held at the above Society's exhibition in the Wavertree Recreation Ground, Liverpool. Lectures and demonstrations were given at frequent intervals each day by Mr. Herrod, and were attended by large numbers, the fine weather being most suitable for the manipulations.

The Rev. J. F. Buckler, Bidston Rectory, Birkenhead, judged the honey and appliances, whilst Messrs. Lloyd-Evans and George Roberts officiated as stewards of the bee-department.

A tent of considerable size was completely filled with exhibits, there being four large collections of appliances, besides a considerable show of hives, &c. In the open competitions for honey some grand exhibits were shown, both sections and jars; but the prizes went entirely to the south. North Wales sent some excellent sections which, unfortunately, had to be disqualified for too deep lace edging. This is a question which causes friction, and ought to be determined by authority as soon as possible. There was a little first-class extracted honey in the Local Class, the North of Lancashire contributing most, though the third prize was taken by an exhibitor near Liverpool. Lancashire and Cheshire honey has been very disappointing this year, both for its scarcity and general poor quality.

As stated above, the Rev. J. F. Buckler, Bidston Rectory, undertook the duties of judge, the following being his awards:—

Twelve 1-lb. Sections (open).—1st, J. Sopp, Crowmarsh, Wallingford; 2nd, Wm. Woodley, Beedon, Newbury; 3rd, H. T. Beale, Andover.

Twelve 1-lb. Jars Extracted Honey (open).—1st, H. T. Beale; 2nd, Thos. Blake, Broughton, Stockbridge; 3rd, Wm. Woodley.

Twelve 1-lb. Jars Extracted Honey (county only).—1st, J. F. Williamson, Fleetwood; 2nd, James Cragg, Great Eccleston, Garstang; 3rd, Edwin Maxwell, Gateacre, Liverpool.

Twelve 1-lb. Sections (county only).—2nd, Edwin Maxwell.

Articles of Food, &c., in which Honey is an Ingredient.—1st, Peter Scattergood, Stapleford, Notts.

Collection of Hives and Appliances.—1st, George Rose, Great Charlotte-street, Liverpool; 2nd, James Smith, Palm-grove, Claughton, Birkenhead.

Outfit for a Beginner.—1st and 2nd, George Rose; 3rd, James Smith.

Complete Frame Hive.—1st and 2nd, George Rose; 3rd, James Smith.

Honey Extractor.—1st and 2nd, James Smith; 3rd, Thomas Lowth, Hexton, Hitchin.

On the second and third days of the Show, Mr. W. Broughton Carr held an examination for the 3rd Class Experts' Certificate of the B.B.K.A., ten candidates presenting themselves.—(*Communicated*).

LEICESTERSHIRE B.K.A.

Glorious weather favoured the annual flower-show and gala held on August 8 and 9, at the Abbey Park, under the auspices of the Leicester Corporation Parks Committee.

The whole exhibition was in every respect the most successful ever held since the show was organised, over 40,000 persons passing the gates during the two afternoons when the exhibition was open.

An exhibition of bees, honey, and appliances was held in a special tent, under the management of the L.B.K.A., and the efforts of the Hon. Secretary to make this section of the show prove successful were fully rewarded. The lectures and demonstrations in the manipulating tent by Messrs. A. G. Pugh, Beeston, Notts, and H. M. Riley, Leicester, assisted by the Secretary as manipulator, attracted many visitors, and created much interest.

The entries exceeded those of last year, and the quality of the honey was quite up to the average.

Mr. A. G. Pugh and Mr. H. M. Riley kindly officiated as judges, and made the following awards:—

Observatory Hive, with Bees and Queen.—1st, Thos. Richards, Church Gresley; 2nd, J. Cooper, Leicester.

Twelve 1-lb. Sections.—1st, F. Pickersgill, Withcote; 2nd, W. P. Meadows, Syston.

Twelve 1-lb. Jars Extracted Honey.—1st, J. Waterfield, Kibworth; 2nd, Miss S. J. Cooper, Leicester; 3rd, J. Fewkes, Great Glenn; 4th, Miss Cooper, Leicester; h.c., C. Pridmore, South Wigston.

Display of Honey.—Equal 1st, Miss S. J. Cooper and W. P. Meadows; 3rd, Mrs. A. W. Garner, Waltham.

Twelve 1-lb. Jars Granulated Honey.—1st, W. P. Meadows ; 2nd, J. Cooper.

Six 1-lb. Jars Extracted Honey (Novices).—1st, C. Oxley, Desford ; 2nd, Mrs. Waterfield, Kibworth ; h.c., J. Orton, Enderby.

Six 1-lb. Sections.—1st, J. Orton ; 2nd, W. W. Falkner, Market Harborough ; h.c., Rev. S. Bradbrook, Misterton.

Six 1-lb. Jars Extracted Honey (Novices).—1st, Mrs. Waterfield ; 2nd, G. Hill, Fleckney ; 3rd, W. Baldock, Loughborough.—(*Communicated.*)

NORTHAMPTONSHIRE B.K.A.

ANNUAL SHOW.

The annual honey show of the above Association was held in connection with the Horticultural Society's exhibition at Delapre Park, Northampton, on August 7 and 8.

The honey exhibits, numbering 128 entries, were staged in a spacious tent, and made up a very fine display. Mr. R. King, Wolverton, and Mr. J. R. Truss, Ufford Heath, judged the honey and beeswax ; Mr. W. Lawrence and Mr. G. Hefford (confectioners), of Northampton, adjudicating in the classes for honey cakes, &c , the following being their respective awards :—

Twelve 1-lb. Sections.—1st, F. J. Old, Piddington ; 2nd, C. Cox, Brampton ; 3rd, J. Perry, Banbury ; 4th, J. Adams, West Haddon.

Twelve 1-lb. Jars Extracted Honey (light).—1st, A. Saunders, Chapel Brampton ; 2nd, C. Cox ; 3rd, C. Wells, Oxendon ; 4th, J. Adams; 5th, W. Reynolds, Overstone.

Six 1-lb Jars Extracted Honey (dark).—1st, C. Wells ; 2nd, J. Adams ; 3rd, C. Cox.

Six 1-lb. Jars Granulated Honey.—1st, W. Manning, Northampton ; 2nd, F. J. Old ; 3rd, J. Adams.

Three Shallow Frames of Comb Honey.—1st, C. Cox ; 2nd, F. J. Old ; 3rd, J. Adams ; 4th, C. Wells.

Beeswax.—1st, C. Wells ; 2nd, C. Cox ; 3rd, J. Adams ; 4th, Mrs. Cox.

NON-PREVIOUS WINNERS ONLY.

Six 1-lb. Sections.—1st, George Page, Holcot ; 2nd, H. England, Overstone ; 3rd, E. H. Williams, Overstone.

Six 1-lb. Jars Extracted Honey.—1st, A. Saunders ; 2nd, E. H. Williams ; 3rd, H. England.

Super (glass or wood).—1st, Mrs. Blencowe, Brampton.

SPECIAL PRIZES.

Single 1-lb. Jar Extracted Honey (open).—1st, W. Patchett, Thoresway, Caistor ; 2nd, Thos. Blake, Broughton, Stockbridge; 3rd, H. F. Beale, Andover ; 4th, W. Hatliff, Thoresway ; 5th, O. Orland, Flore ; 6th, T. Louth, Hitchin ; v.h.c., O. Orland and W. Patchett ; h.c., Mrs. Cox and C. Cox.

Single 1-lb. Jar Extracted Honey (Class W).—1st, W. Patchett ; 2nd, Thos. Blake ; 3rd, H. F. Beale ; 4th, O. Orland ; v.h.c., O. Orland and T. Louth ; h.c., R. Hefford, C. Wells, and C. Cox.

Cake, not less than 1 lb., sweetened with Honey.—1st, Peter Scattergood, Stapleford ; 2nd, Mrs. Hefford, Kingsthorpe ; 3rd, Mrs. Wells, Oxendon ; 4th, Miss Perry, Banbury.

W. T. Munn, Northampton, received a h.c. for Trophy of Honey, &c.—(*Communicated.*)

HONEY SHOW—MARLOW.

The annual show of bees, hives, honey, and appliances was held at Great Marlow on Wednesday, August 9, in connection with the Marlow Horticultural Society. The entries were numerous, and the display and quality of the honey excellent, the weather being all that could be desired. Mr. H. W. Brice undertook the duties of judge, and made the following awards :—

Collection of Hives and Appliances.—1st, Jas. Lee & Son, Holborn-place, W.C. ; 2nd, T. Lanaway & Son, Redhill.

Complete Frame Hive for General Use.—1st, James Brunsden, Maidenhead ; 2nd, Jas. Lee & Son ; c., Lanaway & Son.

Frame Hive for Cottager's Use.—1st, Jas. Lee & Son ; 2nd, T. Lanaway & Son.

Outfit for Beginners.—1st, T. Lanaway & Son ; 2nd, Jas. Lee & Son.

Observatory Hive with Queen and Bees.—1st, Jas. Lee & Son.

Twelve 1-lb. Sections.—1st, W. Woodley, Newbury ; 2nd, H. W. Seymour, Henley-on-Thames. Several v.h.c. were given in this class.

Twelve 1-lb. Jars Extracted Honey.—1st, H. W. Seymour ; 2nd, Rev. H. F. Goffe.

Six 1-lb. Sections.—1st, H. W. Seymour ; 2nd, Rev. S. R. Wilkinson, Marlow. Several h.c. and c. were also given in this class.

Six 1-lb. Jars Extracted Honey.—1st, H. W. Seymour ; 2nd, C. W. Batting, Marlow. Two v.h.c. were also awarded.

Exhibit of Comb and Extracted Honey (open).—1st, H. W. Seymour ; 2nd, Geo. Sawyer, Marlow.

Six 1-lb. Sections (local).—1st, Geo. Sawyer ; 2nd, Rev. S. R. Wilkinson ; and two v.h.c. given.

Six 1-lb. Jars Extracted Honey (local).—1st, Geo. Sawyer ; 2nd, F. E. Slocock.

Mead.—1st, H. W. Seymour.

Honey Vinegar.—H. W. Seymour.

Beeswax.—1st. Jno. Berry, Llanrwst ; 2nd, James Brunsden ; c., H. W. Seymour.—(*Communicated*).

SOME EXPERIMENTS WITH FOUL BROOD GERMS.

F. C. Harrison, B.S.A.,
Bacteriologist, Ontario Agricultural College, Guelph.

A number of correspondents of the *American Bee Journal* and other periodicals have lately given their opinion that the spores of *bacillus alvei* were destroyed in a very short time in

boiling honey. In order to ascertain if this belief was conjecture or otherwise, a number of experiments were tried and with the following results:—

The honey (20 lb. of clover and 20 lb. of buckwheat) was furnished by Mr. R. F. Holtermann, of Brantford. The clover honey had a specific gravity of 1 042 and the percentage of formic acid in it was ·057. The buckwheat honey had a specific gravity of 1 042, the percentage of formic acid being ·170, that is about three times more acid than in the clover sample. (This result was in accord with a number of other experiments made on this subject two years ago and reported in the Agricultural College report for 1896.)

The formic acid determination of the two samples is given because this substance is used in Europe as a curative or preventive of foul brood. Bertrand, in the *Conduite du Rucher* (eighth edition, Nyon, Switzerland), gives the following directions for the use of this substance:—

"A solution of acid in water in the following proportions is made: acid 10, water 90, and this solution is poured into the cells, the frame having been taken out of the hive. In addition, to hasten the cure, a tablespoonful of the solution to a litre of syrup may be fed to the bees."

This last quantity, a tablespoonful of a 10 per cent. solution of formic acid to a litre of syrup, is exactly equivalent to a ·15 per cent. solution of formic acid, or a little less than is nominally found in samples of buckwheat honey. This small amount, however, is sufficient to inhibit the growth of *bacillus alvei*, or, in other words, it acts as an antiseptic.

In a number of experiments the writer has found that nutrient media made up with ·15 per cent. of formic acid was sufficient to prevent the growth of this germ, even when the cultures were placed under the most favourable conditions for their growth, except, of course, the presence of the acid. This strength of acid has no effect on the spores. Spores kept in ·15 per cent. formic acid beef-broth for six months retained their germinating powers unimpaired.

In these experiments the spores were treated in three different ways:—

(*a*) Silk threads were dipped into water containing spores of *bacillus alvei* about three weeks old and allowed to dry.

(*b*) A large test tube was half filled with honey, and spores were thoroughly mixed into it.

(*c*) Small capillary tubes were filled with water and spores and then sealed.

These three lots of spores were then suspended in 20 lb. of boiling honey. At the end of every fifteen minutes, a silk thread, a portion of the honey and spores from the test tube, and two capillary tubes, were withdrawn from the boiling honey, immediately inoculated into nutrient media, and placed in the incubator at a temperature of 37 deg. C. By the growth or absence of growth in the media one could ascertain if the spores had been killed or not.

The results of these experiments were as follows:—

CLOVER HONEY.

(*a*) SILK THREADS.

Time.	Temperature.	Result.
15 min.	115° Centigrade	Growth
30	113° ,,	,,
45	115° ,,	,,
60	113° ,,	,,
1.15	114° ,,	,,
1.30	115° ,,	,,
1.45	115° ,,	,,
2 hrs.	114° ,,	,,
2.15 min.	116° ,,	,,
2.30	115° ,,	,,
2.45	115° ,,	No growth
3 hrs.	115° ,,	,,

(*b*) HONEY IN TEST TUBE.

Time.	Temperature.	Result.
30 min.	113° Centigrade	Growth
45	115° ,,	,,
60	113° ,,	,,
1.15	114° ,,	,,
1 30	115° ,,	,,
1.45	115° ,,	,,
2 hrs.	114° ,,	,,
2.15 min.	116° ,,	,,
2.30	115° ,,	No growth
2.45	115° ,,	,,

(*c*) CAPILLARY TUBE.

Time.	Temperature.	Result.
30 min.	113° Centigrade	Growth
1 hr.	113° ,,	,,
1.30 min.	115° ,,	,,
2 hrs.	114° ,,	,,
2.15 min.	116° ,,	,,
2.30	115° ,,	,,
2.45	115° ,,	No growth
3 hrs.	115° ,,	,,

From these experiments it is evident that to kill the spores of this bacillus a temperature of 113 deg. C. to 116 deg. C. for two and a half to two and three-quarters' of an hour was necessary. MacKenzie,* in his experiment on the thermal death point of the spores in wax, found that they were killed by a temperature of 100 deg. C. for two and a half hours.

The above experiments were again repeated with both clover and buckwheat honey and with the same results as above.

The vitality of spores taken from dead larvæ is, as a rule, somewhat less than that of spores taken from comparatively young cultures.—*Canadian Bee Journal.*

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Mr. Bradley, whose apiary appears in the illustration on next page, is an old reader of our journals, and one of whom we are glad to learn he has profited by the perusal of them. It is also satisfactory to note the fact of his being one of the useful type of bee-men who keep a correct account of their bee experience from the profit and loss point of view. It is from

* MacKenzie: Experiments in Foul Brood. Report of the Agricultural College for Ontario, 1892.

uch that one can learn what there is in the pursuit, and what a working man may make out of his home hobby, apart from the pleasure it has yielded in his leisure hours.

Asked for a few particulars regarding his bees, Mr. Bradley writes :—

"My interest in the pursuit of bee-keeping was first aroused by reading an article on the subject in a newspaper early in 1883, and after getting some advice from 'an old hand' at the craft and studying 'Modern Bee-keeping,' I ventured to buy a stock in a frame hive in June of that year. At this time I lived at Stretton Heath, but in 1886 I moved to Stoney Stretton, where I have since lived. I felt rather frightened of the bees at first, and used to work among them with a veil well tucked in, long-sleeved gloves, and my trouser legs carefully tied over my boot tops. Those precautions are, of course, now dispensed with, but I met with a good few difficulties and made many mistakes. However, by perseverance, studying Cowan's 'Guide Book,' and reading the British Bee Journal, I have overcome most of them. I keep, on an average, about twenty-four stocks, and work principally for extracted honey—white clover being our main source of supply. The only year of failure with me since I began bee-keeping was 1888, there being next to no honey taken anywhere that season, and I think 1887 was the best year I ever had. I work my bees on the let-alone system, as far as possible, never disturbing them only when absolutely necessary. I often leave a rack of sections on some hives for the winter, as I have found it to answer well in the past. I do but very little autumn feeding, but when there comes a fine day towards Christmas, I put cakes of soft candy on any hives where stores are running short, and one year had quite a new experience in this line, as follows:—On December 26, 1896, I put a cake of candy on a hive, and on February 9 following I found the bees had eaten the candy and built a piece of comb in the space from which the candy had gone! That was the earliest bit of comb building I ever saw.

"I grow bee-flowers on the spaces between the hives, borage being one of the best. During my earlier years I used salicylic acid as a preventive against disease among the bees, but when I found the acid was taken from the willows, I gave it up—there being an abundance of willows about here. I am thankful to say that I have never yet seen foul brood.

"I have kept a strict account from the first of my expenses and receipts, and can give items on either side for any year, so that I know how I am going on from a £ s. d. point of view.

"During 1896 I sold 837 lb of honey and one swarm for £32 6s. 3½d.

"The total amount of my receipts from the first to the end of last year is £273 10s. 11d, and I shall be within the mark if I say my present stocks of bees and the large amount of appliances that I have are worth £100. They might not sell for that, but I consider they are worth it to me.

MR. JOHN BRADLEY'S APIARY, STONEY-STRETTON, YOCKLETON, SALOP.

"The account then stands thus:—

Total received.....	£273	10	11
Value of stock.....	100	0	0
	£373	10	11

That will be a trifle under £25 a year—reckoning fifteen years. Then there is the honey that we have used ourselves, and what I have given away to friends and others.

"Total expense, £153 15s. 0½d.—that includes cost of carpenter's bench and tools, postage of letters, railway fares, &c.

"I will only mention one other item of expense—a large mahogany-veneered cupboard, over 7 ft. high, for keeping honey in.

"I think this is about all I can tell you, except that I am a shoemaker by trade and work at my own home. The other figure besides myself seen in photo is that of my father who helps me in hiving swarms, &c."

As these particulars were furnished some time ago we will be glad to hear how our friend has fared this year.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of July, 1899, was £6,205.—*From a return furnished to the* British Bee Journal *by the Statistical Office, H.M. Customs.*

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

HYBRID BEES.

[3739.] May I be allowed to give my experience on hybrid bees? I have tried all races of bees—English, Cyprian, Carniolan, and Ligurian, and after several years' experience have come to the conclusion that a stock of *first cross* English-Carniolan hybrids with a one-year-old queen is not to be surpassed for profit. "Their combs," as Mr. Cowan says on page 135 of "Guide Book," "are very white, as they use but little propolis," and with regard to the queens (a very important item) you get the working qualities of the British bee and the prolificness of the Carniolan moderated. The bees, too, are exceedingly quiet to handle. I find a one-year old queen (in the height of summer) always, to my knowledge, deposits her eggs on every comb even when there are as many as fifteen frames in the hive. I think a hive with ten frames is superior to one with fifteen because it takes such a time to work up a hive of fifteen frames till it is fit for supering. If the bee-keeper is careful he will have practically no trouble with swarms. The pure Ligurian is also a good strain of bee. I think it would be very interesting to have the opinions of Bee Journal readers concerning the qualities of various races, &c., of the honey bee, as it is a very interesting subject.—Sunshine, *Birmingham.*

AN IMPROVISED "SOLAR" EXTRACTOR.

[3740.] I have been very successful with melting up old combs, &c., by using a garden light, commonly called a cucumber-frame, by simply fixing up a piece of corrugated iron within about 3 in. of the glass. Of course it follows the slant of the glass. The combs are placed on the corrugated iron and the wax runs into a piece of spouting fixed along the lower edge, with water in it, for the wax to drop into.

A friend of mine at Leamington, from whom I got the idea, uses this same device, and as he has not written about it, I thought I would let readers of B.J. know of so easily made a "Solar" extractor.—John Walton, "*Honey Cott, Weston, August* 12.

A SUGGESTION.

BADGES FOR BEE-KEEPERS.

[3741.] I was very pleased to see in Bee Journal of July 6 (page 259) that our French brethren of the craft visited the "Royal" Show at Maidstone with their "badges" on. That reminds me of a suggestion I intended to make some time ago, but criticism being so keen in these days, it makes one shy of suggesting anything. Well, my suggestion is that all British bee-keepers who are members either of the B.B.K.A. or of its affiliated associations, especially those who hold office or possess experts' certificates, should wear a badge, such as those worn on the occasion referred to above. I do not presume to suggest any style or pattern, leaving that for the B.B.K.A. Council to decide upon. But it would be a great boon to bee-men to be able to distinguish their fellows in the craft, and a spur to the spread of associations.—G. A. Martin, *Biggleswade, Beds.*

Queries and Replies.

[2253.] 1. Can you kindly tell me the reason why occasionally bees will now come out and fly in a big swarm before the hive? Would it be a batch of young bees marking the entrance? I have noticed they seem to be generally doing well when this happens. 2. Can "Wells" dummies be purchased? If not, what special rules should be observed

in making them? 3. In wintering bees the "Guide Book" (page 111) says:—"The hives should have about two superficial feet of sealed honey, which will last the bees well through the winter and early spring." Does this mean superficial measurement of one side of comb or of both sides? I take it to mean 2 ft. of honey made up to 30 lb. by feeding with syrup. Is this so? 4. Is it not a fact that queens occasionally lay eggs on the top of pollen, thus making the capping of the bell appear to be ¼ in. to ⅜ in. in length, and to a novice would appear to be the work of a fertile worker?—"INQUIRER," *Bristol, August* 10.

REPLY.—1. Yes; it is the young bees which at certain seasons have what bee-keepers call a "turn out" in the middle of most warm sunny days. It is a sign of prosperity within the hive. 2. Mr. Wells, we believe, makes the perforated dummy bearing his name for sale. 3. The two superficial feet of sealed honey mentioned means full thickness of both sides of the comb, measured from one side only; and this measurement approximates to 30 lb. of stores. Roughly speaking, it needs four standard-size frames of comb, fairly well filled on both sides, to make up the weight stated. 4. No. When cappings project beyond the normal width of combs, as stated, it may be taken for granted it means drone brood in worker cells.

[2254.] *Uniting Bees.*—I have just bought Mr. Cowan's "Guide-Book," in the hope of learning how to unite a strong colony of bees—which has been in a box two or three years, and from which I have had nothing but swarms—to a weak lot that I drove nine days ago into a bar-frame hive. I do not find any instructions in the book to show that I can do this. On page 105 I certainly see are directions for uniting driven bees with an established stock, but I cannot treat my stock in the bar-frame hive as established, and there are no combs to move. On the other hand, I cannot put the combs from the old stock into the bar-frame hive, as they would not fit. I should be most grateful for advice what to do. I have three strong old stocks in empty tea boxes, from which I have had no honey, and I am afraid my stock in the frame-hive will not get through the winter alone. About three weeks ago I drove an old stock into a skep, and I threw them and two swarms in front of the hive in question and thoroughly dusted them with flour; but soon afterwards I saw them fighting, so I watered them all with a weak mixture of peppermint and water, and gave them such a shower that I drowned a lot; but it was all to no purpose; they went on fighting, and in a week were all dead. There is no one near here who can tell me how to unite bees properly.—A NOVICE, *Machynlleth.*

REPLY.—We cannot add much to what appears in the "Guide Book" on uniting bees, because, if properly carried out, the methods described rarely fail. The point is to subdue each separate lot of bees by sprinkling with flour; and the bees in frame-hives should be shaken from their combs on to the others as the latter run into the hive. It distinctly states on page 105 that great care is needed to prevent fighting. If we read your note correctly, a driven lot of bees and two swarms were thrown out in front of an established stock, and the bees in the latter, refusing to unite with the strangers, killed them all off. The mistake, therefore, was not to flour the bees in frame-hive before uniting.

[2255.] *Removing Surplus Honey.—Using Super Clearers.*—As I have only been a subscriber to the BEE JOURNAL for a very short time, I must apologise for asking help so soon, but I have what is, to me, an urgent question, and I shall be glad if you will treat it as such. On the 7th inst. I put "super clearers" on two hives in the morning (under two racks of sections in both cases) and left till evening. I found then that the roof was not quite in place on one, so that the sections were filled with angry bees, "robbing" and fighting being in full swing. I may say that, having no "apifuge" on hand, I was wearing woollen gloves. The bees (generally very quiet Ligurians) went for me promptly, and I took away one of the racks of section (robbers following all the way), replacing the unfinished one. As robbing continued, I removed this also the next day and replaced it with sections fitted with a crate of "starters" only, till things should quiet down. The bees in the second hive also stung my gloves all over, owing, I suppose, to there being honey on them. I am therefore induced to ask:—1. Is it the better plan to leave "clearer" on during night and take honey in the early morning? Or (2) is it better to clear one surplus chamber at a time where possible? 3. Would robbery have been induced by the fact that all my hives are wedged up from floor boards? 4. Shall I be right in removing the empty rack from the robbed hive and giving it back its old crate to finish and seal, or should I give them back the sections singly, smoking the bees to clear them from the section? 5. Should this be done while they are working, or in the evening, for fear of further robbing?—QUERIST, *Guildford, August* 10.

REPLY.—First let us say how essential it is to be quite sure, when using super-clearers in removing surplus, there is no possible means of access to the surplus chambers by bees from the outside. If this precaution be neglected all sorts of mischief may follow. For the rest we reply:—1. We have found it equally good to put "clearers" on at 5 a.m., and remove after sundown, or to set on "clearer" at 6 p.m., and remove honey early next morning. All depends on the temper of the bees and on the surroundings. 2. It is as easy to clear half a dozen stocks as one, if you

have "super-clearers" for each. 3 Robbing would be brought about, we think, by some oversight on your part in the direction mentioned in our opening remarks of this reply. 4. There is little hope of bees sealing over sections not finished by mid-August unless there is good heather pasturage within reach. 5. All work that induces robbing in autumn should be done when bees are not on the "prowl" for mischief, wherever possible.

Obituary.

DEATH OF MRS. SANDS.

We deeply regret to record the death of Mrs. Annie H. Sands, the mother of our late esteemed correspondent, Herbert J. Sands ("Lordswood"). Mrs. Sands—whose touching letter announcing the death of her son appears on page 91 of our issue of March 9 last—was only ill for a fortnight, and passed away peacefully at Rednal Cottage on the 22nd ult., in the sixty-second year of her age. Her death, which was entirely unexpected, has caused another sad gap in the family circle, and in tendering our own heartfelt sympathy to Mr. Sands and family, it is certain that we will be joined by all readers of this journal.

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING AUGUST 12, 1899.

1899.	Bar. in.	Tem. 9am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Aug. 6....	30·02	64·1	70	57	13	63·1	·02
,, 7....	30·05	66·1	71	56	15	63·1	—
,, 8....	30·07	61·2	70	54	16	61·5	—
,, 9....	30·11	63·0	75	50	25	61·8	—
,, 10....	30·24	64·8	77	47	30	61·1	—
,, 11....	30·31	64·0	77	44	33	59·5	—
,, 12 ...	30 31	64·8	78	47	31	61 6	—
Means	30 16	63·1	74·0	50·7	23 3	61·7	·02*

* Total, ·02 in.

Mean vapour tension, 0·399 in.; mean relative humidity, 69 per cent.; mean temp. of the dew point, 52°·3. For the week ending August 5, the mean temp. viz., 66°·2, was +4°·8, and the rainfall, viz., ·02 in., was −·63 in. The rainfall, July 2 to August 5, viz., 65 in., is −2·37 in, and April 2 to August 5, viz., 6·11 in., is −2·74 in., and January 1 to August 5, viz., 11·06 in., is −2 90 in. The week's rainfall, viz., ·02 in., =452·46 gallons, or 2·02 tons to the acre, or 1·6 oz. to the square foot.

EXCESSIVE RAINFALL.

With reference to the report of excessive rainfall in the B.B.J. of August 3, p. 395, at line 4 from the bottom, for "At Shaftesbury and Culhampton," read, "At Shaftesbury and *Cullompton*.

FRED. COVENTRY.

Duddington, Stamford.

Bee Shows to Come.

August 16 and 17 in St. John's Schoolroom, Blackpool.—Annual Show of the Blackpool and Fylde Horticultural Society. Exhibition of honey under the auspices of the Lancs B.K.A.

August 17, at Goole.—Bee and Honey Show in connection with the Goole and District Agricultural Society. Six open classes, including one for single 1-lb. jar (entry free). Schedules from J. Luddington and N. S. White, Secs., Lindum House, Goole. **Entries closed.**

August 18, at Exeter.—Devon B.K.A., Second Annual Show of Bees, Honey, Hives, and Appliances, in connection with that of the Devon and Exeter Horticultural Society. Ten open classes. Schedules from Mr. H. Tolson, Park House, St. Thomas, Exeter. **Entries closed.**

August 19 at Windsor.—Annual Flower and Honey Show of the Windsor and District Liberal Club. Five classes open to all. Schedules from the Secretaries, Messrs. J. Hyde and H. Sloane, 19, Peascod-street, Windsor. **Entries close August 11.**

August 23, at Falloden.—Honey Show, under the auspices of the Falloden and District Horticultural Society. Open class for two 1-lb. sections and two 1-lb. jars extracted honey. Schedules from Mr. A. S. Welsh, Secretary, Embleton, Christon Bank, R.S.O.

August 23 and 24, at Shrewsbury.—Shropshire B.K.A. annual Show in connection with the Shropshire Horticultural Society's great Fête and Exhibition. Open classes for hives, appliances, honey, &c. Schedules and entry forms from Mr. Jno. Palmer, 17, Brand-lane, Ludlow. **Entries closed.**

August 25 and 26, at Dunfermline, N.B.—Bee and Honey Show, West of Fife and District B K.A., in connection with the Horticultural Society. Schedules from Geo. Weston, Sec., Grant's Bank, Dunfermline. **Entries close August 22.**

August 29 at Northwich.—Cheshire B.K.A. Show, in connection with the Cheshire Agricultural Society. Open classes for honey, wax, and single hives. Schedules from Mr. T. A. Beckett, St. Werburgh's Chambers, Chester. **Entries close August 8; at double fees August 15.**

August 30 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles." Schedules from Mr. J. Kerr, Hon. Sec., Balmoral-road, Dumfries. **Entries close August 23.**

August 31, at Abergwili.—Honey Show in connection with the Horticultural Exhibition. Open classes for single 1-lb. jar; prizes, 10s., 7s. 6d., 5s., 2s. 6d. And single 1-lb. section; prizes, 7s. 6d., 5s., 2s. 6d. No entry fee. Schedules from J. Jones, 3, Gifre-gardens, Abergwili. **Entries close August 26.**

August 31, at Bradford Abbas.—Yetminster District B.K.A. Annual Show in conjunction with the Bradford Abbas Flower Show. Open classes for Single 1-lb. Sections, four prizes (entry free), and for Best Frame-hive, two prizes (entry fee, 1s.).—Schedules from G. Leeding, Hon. Sec. B.K.A., Bradford Abbas, near Sherborne, Dorset. **Entries close Aug. 26.**

September 6 and 7 at Birkenhead.—Cheshire B.K.A. Show, in connection with the Wirral and Birkenhead Agricultural Society. Liberal prizes for hives, honey, &c. Eight classes, including one (free entry) for 1-lb. jar of honey with four prizes. Honey tent in good position in show yard. Bee lectures and demonstrations. Schedules from Mr. Edwardson, 6, Hamilton-square, Birkenhead. **Entries close August 23.**

September 7, in the Town Hall, Castle Douglas.—Annual Show of the Galloway Horticultural and Honey Society. Open classes, with liberal prizes for three 1-lb. jars, and for three 1-lb. Sections. Schedules from Mr. Thos. Myers, Castle Douglas, N.B. **Entries close September 2.**

September 13 and 14 at Derby.—Eighteenth annual show of the D.B.K.A., in connection with that of the Derbyshire Agricultural Society. Eight open classes, including two with free entry for 1-lb section and 1-lb. jar of honey. Schedules from F. Walker, hon. sec. D.B.K.A., 64, Gerard-street, Derby. **Entries close August 31.**

Notices to Correspondents & Inquirers.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

C. A. Atchley (Bristol).—*Exhibiting Shallow Frames of Comb-honey.*—These may be had from any appliance dealer. They are made in several forms, some cases holding a single frame, others are hinged like a folding screen, and have accommodation for three frames; a third form is like an observatory hive, one glass side being hinged, and the frames hang one above the other.

W. R. H. Ray (Chippenham).—*Samples Missed in Post.*—We have come across your note dated some weeks ago, but the sample of comb referred to must have miscarried in post, as it did not reach us.

J. H. Chapman (Doncaster).—*Bees Dying in Spring.*—1. It is no doubt a case of famine, seeing that there was no disease among the dead brood. In fact, whenever combs are found packed with dead bees headforemost in nearly every cell, and no food in the hive, it is about certain that death is the result of hunger. 2. The combs free from dead bees will be quite fit for using again.

W. R. (Cardiff).—Insect sent is not a bee at all, though bearing some resemblance to *Apis mellifica.* It belongs to the order *Diptera*, or flies.

Tryon (Cornwall).—*Driven Swarm Deserting Hive.*—1. It is never worth while trying to save the bees of a weak stock affected with foul brood. Better to brimstone the bees and burn them along with combs. 2. We should suspect the queen had succumbed during the starving period, and was not with the driven bees when they deserted the hive. 3. Very likely the bees have entered one of the hives adjoining to their old stand. 4. Bees sent are of the common variety.

R. F. (Ireland).—Comb is affected with foul brood.

E. C. R. W. (Romsey).—*Heather Honey from Hampshire.*—As a mild-flavoured heather honey your sample is very good. The colour and consistency is also good.

W. J. G. (York).—*Giving Surplus-room to July Swarm.*—1. Seeing that it is about hopeless to expect a swarm hived so late as July 13 to yield surplus this year, it is no use leaving surplus chambers on. The bees may, however, be safely wintered on the six or seven frames of comb now built-out and stored. 2. The best time to renew combs in the hive referred to will be the spring of next year, when, by removing an outside comb, a frame—fitted with foundation—may be inserted in the brood-nest at intervals of a week or so. If this is done in settled warm weather no bad results will follow, and, with a good queen, breeding will go on very fast in the newly-built combs.

S. M. (Cornwall).—*Suspected Comb.*—Microscopic examination of cell contents show the foul-brood bacilli in great numbers, but no spores. Judging, therefore, by sample, the disease will not be of long standing.

"A Beginner" (Staffs)—*Requeening Stocks.*—1. If it is intended to requeen with a Ligurian this year the sooner it is done the better. 2. Both samples of honey are good in flavour and colour. No. 2 is best in colour, but No. 1 is superior in specific gravity or density.

F. D. (Wembley).—*Queen Cast Out of Hive.*—The dead insect sent is the old queen.

(Miss) E. B. (Woodbridge).—*Feeding for Winter.*—Only an examination of the body-box will show whether or not the bees will require feeding for winter. It is by no means safe to assume that, because only super honey has been taken, there are plenty of stores below in the untouched body-box. It very frequently happens that, after removal of a good harvest of supers, the bees are left almost foodless.

H. M. T. (Oxon).—*Judging Honey.*—1. The points we consider most important in the order of merit are (1) flavour, (2) consistency or density, (3) aroma, (4) colour. 2. Dark honey, intended as winter food for bees, only needs thinning down, with hot water, to the consistency of ordinary sugar syrup.

J. E. (Cornwall).—*Suspected Foul Brood.*—1. The time required for microscopical examination of the six samples of comb will defer our reply till next week. 2. See leader on page 319 for reply *re* varieties of heather.

S. E. (Farningham).—*Selling Exhibits at Shows.*—No doubt you will agree with us in deciding that it is better to defer comment on the subject of your letter till the matter has been dealt with by the B.B.K.A., to whom the communication was addressed.

(Mrs.) E. E. (Brimscombe).—*Variation in Colour of Honey.*—1. The difference in colour can only be accounted for by supposing that the bees of the particular hive which were gathering very light honey, while those of adjoining stocks were bringing in darker honey, is that the first-named had found out a better forage-ground. 2.

The press-cutting sent is only another "fable" about bee-keeping.

H. C. (Tavistock).—*Judging Honey.*—See reply to "H. M. T." (Oxon).

*** We refer several correspondents—from whom inquiries have reached us with regard to the best varieties of heather for yielding honey—to our leader on front page of this issue.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

BROWN LEGHORNS. Would EXCHANGE for BEES, PEN, SIX HENS, and COCK, healthy and laying, including winner second prize. LOWCOCK, Woodseats, Sheffield.

FOUR good STOCKS of BEES FOR SALE, bar-frame hives (standard size), excluder, section rack, super, and lift to each, £3 10s. the lot: also BLOW'S thirty-five shilling EXTRACTOR, almost equal to new, £1 5s. Deposit or cash. AMBROSE, Bishampton, Pershore.

QUANTITY good well-filled SECTIONS FOR SALE, 8s. doz. AVERY, Ripley, Surrey.

HONEY LABELS (250) with your name and address, from 2s. 6d. GUEST, King's Norton. 394

CHOICE TESTED QUEENS, safe arrival, price very moderate. GAMBRILL, Bagshot-road, Ascot. 392

SPLENDID SECTIONS, 7s 6d. and 8s. doz.; also fine extracted. GARNETT, Well, Bedale, Yorks. 381

DRIVEN BEES, 1s. 3d. lb.; order early. HERROD, Trentside Apiary, Sutton-on-Trent, Newark. 376

COB NUTS, about 2-cwt., FOR SALE; one lot, 4d. lb. ready shortly. YARWOOD, Hewelsfield, Coleford. 377

HONEY.—FOR SALE, large quantity of splendid EXTRACTED HONEY, sample 2d., also good 1-lb. SECTIONS. GEO. CROMBIE, Hotham, East Yorks. 382

EXTRACTED HONEY, CLOVER, and SANFOIN about 15 cwt. Sample 3d. Tins found. PULLEN, Ramsbury, Hungerford. 374

FOR SALE or EXCHANGE, two Frame Hives and Cylinder Extractor, nearly new. ELLERKER, Nawton, York. 378

FOR SALE, HONEY, finest quality, 56s. cwt. Tins and crates free. 12-lb. tins, 6½d. lb. Samples 2d. H. MAY, Kingston, Tetsworth. 387

HEALTHY DRIVEN BEES in 4 or 5 lb. lots, 1s. 3d. lb. Boxes to be returned. E. LONG, Fulbourne, Cambs. 386

EXTRACTED HONEY (good), about 3 cwt. Sample free. A. BONELL, Witley Court Gardens, Stourport, Worcestershire. 385

SOME Healthy STOCKS in straw hives FOR SALE, also a quantity of EXTRACTED and COMB-HONEY. Apply, BROWN, Sharow Cottage, Ripon. 390

MUST SELL, owing to removal, STRONG LOTS BEES on ten Frames well stored for winter, 12s. 6d. each; Shallow Boxes of Extracting Combs, 4s. each. Apply at once, PRATT, 35, Charlotte-street, Rugby. 391

FOR SALE, two very fine Specimen Plants of the VARIEGATED ALOE; or would exchange for anything useful; bees, or otherwise. C. P. 241, Whitehorse-road, Croydon. 383

DRIVEN BEES! DRIVEN BEES! My well-known strain, 1s. per lb. Empties returnable. Only cash orders, and booked in rotation. OWEN BROWNING, King's Somborne, Stockbridge, Hants. 379

FOR SALE, pedigree smooth-coated IRISH TERRIERS, handsome puppies, 30s. each; would EXCHANGE for BEES or HONEY. P. J. N. No. 15, Church-road, Hendon. 384

Prepaid Advertisements (*Continued*).

HEALTHY DRIVEN BEES at 1s. 3d. per lb., not less than 4-lb. lots. Boxes returnable; also young Fertile Queens at 1s. 6d.; post free; ninth season. R. BROWN, Flora Apiary, Somersham, Hunts. 380

HEALTHY DRIVEN BEES with Queen, 3s. 0d. per lot. Young Fertile Queens, guaranteed, 1s. 6d. each. JOHN THOMAS SOLE, 133, Sturton-street, Cambridge.

BULL TERRIER DOG, about 15 months old, kills rats, moles, rabbits, &c., good swimmer, thoroughly obedient, price 35s., approval if fare paid and deposit; would EXCHANGE Carniolan or Ligurian Bees or Extractor. SALISBURY VILLA, Wembley. 388

WANTED, CLOVER SECTIONS and CLOVER HONEY, packed and carriage paid to London. Empties returned free. Good treatment will lead to further business. No postcards. Quotations to "Z," care of Mr. Gamper, 112, Wardour-street, London, W. 393

DRIVEN BEES, 5s. a stock on rail. PHILLIPS Bredicot, Worcester. 354

DRIVEN BEES, with Queen, 4s. 6d. per lot. Boxes returned. MORETON, Leigh, Worcester.

PROLIFIC QUEENS, Nuclei, Stocks (Skeps and Frame Hives), and Swarms. E. WOODHAM, Clavering, Newport, Essex. 363

ENGLISH MADE HONEY JARS (1-lb. screw-cap), 14s. per gross; sample, 6d. JAS. DYSON, Stainforth, Doncaster. F.N.

"W.B.C.' HIVES.—Make your own at third the cost. For particulars, send stamped addressed envelope. PRIDEAUX, Whitchurch, Salop. 302

QUEENS, STOCKS, NUCLEI, and SWARMS. A few more orders can be accepted. List free. Rev. C. BRERETON, Pulborough, Sussex.

FINE tested ENGLISH QUEENS, bred from my selected strain, in introducing cage, post free, 5s. each. Ready now. W. WOODLEY, Beedon, Newbury.

CHOICE YOUNG QUEENS from docile, prolific, and industrious stock, 3s. 9d. Delivered safely in introducing cages. Reduction on quantity. Circular post free. EDWARDS, "Beecroft," Ashford, Staines. 370

23RD YEAR.—Small SWARMS, with fertile Queens, 5s. 6d.; Three-frame NUCLEI, with Bees, Queen, and Brood, 12s. 6d.; LAYING 1899 QUEENS, 3s. 9d. Delivered. ALSFORD, Expert, Blandford. 369

FURTHER REDUCTIONS. TRANSPARENT CELLULOID QUILTS, post free, 1s. 6d.; CELLULOID QUEEN EXCLUDERS, post free, 1s. 6d. R. H. COLTMAN, Bee-Appliance Maker, Burton-on-Trent.

EXTRACTED HONEY, 5d.; Clover Honey, 6d.; Samples 3d. each; Sections, 6s. and 7s. doz.; Fertile Queens, 4s. post free. SALMON, Bee Expert, Haresfield, Gloucestershire. 353

DRIVEN BEES of my Superior Strain, 7s. 6d., packed free. Three-frame Nucleus, 12s. 6d. and 15s. Shallow Frames of Comb, 1½ thick, 5d. each. JOHN WALTON, Honey Cott, Weston, Leamington. 355

BRICE'S RELIABLE QUEENS. Well-known strain, one quality, one price. Mated tested Queen, 5s. 6d., post free in perfected travelling and introducing cage. Safe arrival guaranteed. HENRY W. BRICE, 100, Brigstock-road, Thornton Heath.

2/2.—BEE GLOVES, as recommended by the great bee authority the Rev. W. E. Burkitt, 2s. 2d. per pair, post paid. Special terms for wholesale buyers. Manufactured by EDWARD REYNOLDS, Glove and Gaiter Manufacturer, Andover. 257

STRONG three-frame Nuclei 1899, tested QUEENS, 10s. 6d. each; fine tested 1899 Queens, 3s. 6d. each. Safe arrival guaranteed. BEES 1s. 6d lb. for 5 lb. lots or over, with queens. Guaranteed healthy. Packages to be returned. WHITING, Valley Apiaries, Hundon, Clare, Suffolk. 368

Editorial, Notices, &c.

THE "BATH BEE CASE."

Referring to the observations, we thought it well to make on the above case in our issue of the 3rd inst. (page 299), we have received several letters expressing approval of the line taken therein, and none to the contrary. This is so far satisfactory, but we have had as yet no suggestion by way of forming a committee to deal with the subject. On the other hand, as will be seen from our correspondence column, page 332, Mr. Wyckham Blackwell kindly promises a guinea and Mr. Webber five shillings, to which the British Bee Journal will also add a guinea. A beginning has thus been made, and we will have pleasure in receiving and acknowledging any further sums, however small, that may be forwarded to this office.

Mrs. Pavy's case well deserves consideration at the hands of all bee-keepers, and true sympathy can be best expressed in practical form by lightening the burden of the law costs she has been unfortunate enough to have incurred through her bees.

SURREY BEE-KEEPERS' ASSOCIATION.

ANNUAL SHOW, CROYDON.

The annual show of the Surrey Bee-keepers' Association was held on August 7, at Beddington Park, in connection with that of the Beddington, Carshalton, and Wallington Horticultural Society. Both as regards quality and quantity the show proved a record one. A tent 90 ft. long by 30 ft. was filled with exhibits, the unwearying efforts of the hon. secretary, Mr. F. B. White, having been rewarded by no less than 268 entries. The interest taken in the show was very great, and the demand for honey was so considerable that it has been suggested that a honey fair or market should be held in connection with a future show. Among the special features of the exhibition may be mentioned the large number (22 entries) of shallow frames of comb honey, no fewer than sixty-six combs in all being staged, some of which were of exceptional quality, the frames being filled and sealed equal to the finest sections; observatory hives with bees, nearly a dozen, distributed throughout the tent, were centres of attraction for small crowds of visitors; and three tasteful trophies or displays of bee-products could not fail to strike the eye and no doubt contributed towards the demand for honey which existed. One novel exhibit consisted of comb honey in glass rings, instead of square wooden sections. In connection with these it was noticeable that the bees had filled up the glass rings much more completely than in any of the square sections, although this latter exhibit was an excellent one.

The judges were Mr. W. Broughton Carr and Mr. W. F. Reid, who awarded the following prizes:—

Twelve 1-lb. Sections.—1st, W. W. Drewitt, Normandy, Guildford; 2nd, I. O. Quinton, Redhill; 3rd, A. Watkin, New Malden; h.c., G. E. Langrish, Frensham; c., A. H. Stedman.

Six 1-lb. Sections.—1st, H. Sayers, Chessington; 2nd, I. Kachler, Croydon; 3rd, I. O. Quinton; h.c., A. Watkin; c, G. E. Langrish.

Six 1-lb. Sections (heather).—1st, Llewellyn Midgley, East Grinstead; 2nd, W. E. Hackitt, Cobham; 3rd, A. Seth Smith, Cobham; c., E. P. Betts, Camberley.

Three Shallow Frames.—1st, Thos. Earl, Crawley; 2nd, E. Bontoft, Caterham Valley; 3rd, A. Watkin; v.h.c., J. R. Aubury, Woking; h.c, F. B. White, Redhill; F. B. White (for a second exhibit); A. Watkin; W. Sole, Merton; c., J. Lampert, Merton; W. Asher, New Malden; J. W. Lewis, Farnham.

Twelve 1-lb. Jars of Light-coloured Honey.—1st, G. E. Langrish; 2nd, J. W. Lewis; 3rd, A. Greenslade, Sutton; v.h.c., F. B. White; h.c., H. Sayers; R. Peters, Banstead.

Six 1-lb. Jars of Light-coloured Honey.—1st, G. E. Langrish; 2nd, J. W. Lewis; 3rd, F. B. White; h.c, Gates, Sutton; c., A. Greenslade; W. E. Hackett; W. Huison, Wallington; J. Davis, Cranleigh.

Six 1-lb. Jars of Dark Honey (not heather).—1st, W. Huison; 2nd, R. C. Blundell, Horley; 3rd, Gates, Sutton; h.c, F. B. White; J. Davis; c., J. Perris, Alfold.

Twelve 1 lb. Jars of Granulated Honey.—1st, J. R. Aubury.

Best and Most Attractive Display of Bee Products—1st, F. B. White; 2nd, A. Watkin; 3rd, R. Peters.

Wax (not less than 1 lb.).—1st, H. Sayers; 2nd, F. B. White; h.c, G. E. Langrish.

Single 1-lb. Section.—1st, H. Seamark, Cambridge; 2nd, W. Patchett, Thorsway, Caistor; 3rd, E. Bontoft; c, A. H. Miller, Egham; J. Lampert.

Single 1-lb. Jar Extracted Honey.—1st, W. Patchett; 2nd, W. Hattiff, Thorsway, Caistor; 3rd, Thos. Blake, Stockbridge, Hants; h.c., A. Greenslade; Rev. H. F. Goffe, Caistor; H. Seamark; c., W. E. Hackett.

Observatory Hive.—1st, Jas. Lee & Son, London; 2nd, J. S. Greenhill, Wimbledon; 3rd, Lanaway & Son, Redhill.

Complete Frame-hive for General Use.—1st, Jas. Lee & Son; 2nd, J. S. Greenhill; 3rd, Lanaway & Son.

Collection of Appliances.—1st, Jas. Lee & Son; 2nd, J. S. Greenhill; 3rd, Lanaway & Son.

Mr. Overton gave demonstrations with bees in the bee-tent, which was crowded during the whole of the afternoon.

During the afternoon Mr. W. Broughton

Carr examined one candidate for the third class expert's certificate of the B.B.K.A.—(*Communicated.*)

STAFFORDSHIRE B.K.A.

ANNUAL SHOW.

The annual show of the Staffs B K.A. was held at Wolverhampton on the 26th and 27th ult., in conjunction with that of the Staffs Agricultural Society. The weather somewhat interfered with the success of the gathering. It was, on the whole, a capital show. The entries in the bee-section compared favourably with that of previous exhibitions, while the quality of the honey and wax was far above the average, and the various stands were most tastefully and artistically arranged with the various appliances. The stand of the Staffordshire Bee-keepers' Association was a great attraction throughout the day, numerous and varied exhibits from all parts of England being staged. The bee-department was in charge of Mr. Robert Cock, County Council lecturer, and Mr. E. E. Crisp, of Coventry, treasurer of the Association.

The Revs. J. F. Buckler (Bidston Rectory) and T. J. Evans (Tarvin Vicarage), judged the bee-exhibits, and made the following awards :—

Honey Trophy (not to exceed 100 lb.).—1st, Harry Wood, Paradise, Lichfield ; 2nd, A. Bayley, Wordsley ; 3rd, Elihu Clowes, Blackbrook, Staffs. ; 4th, J. R. Critchlow, Newcastle.

Twelve 1-lb. Sections.—1st, Harry Wood ; 2nd, Miss F. E. Smith, Lichfield ; 3rd, G. W. Buttery, Wheaton Aston ; 4th, Francis Law, Pattingham.

Twelve 1-lb. Jars Extracted Honey.—1st, J. R. Critchlow ; 2nd, Elihu Clowes ; 3rd, S. Theo. Mander, Wolverhampton ; 4th, Miss F. E. Smith ; v.h.c., Francis Law ; h.c., J. F. Hall, Lichfield ; H. Wood ; c., Wm. Stendall, Penkridge.

Twelve 1-lb. Jars (dark) Extracted Honey.—1st, H. Wood ; 2nd, J. F. Hall ; 3rd, James Stubbs, Stafford ; h.c., Francis Law and J. R. Critchlow.

Six 1-lb. Jars Granulated Honey.—1st, Elihu Clowes ; 2nd, G. W. Buttery.

Three Frames of Comb Honey.—1st, A. Bayley ; 2nd, Francis Law ; 3rd, W. S. Phillips, Wolverhampton.

Observatory Hive, with Bees.—1st, Elihu Clowes ; 2nd, J. R. Critchlow ; 3rd, S. Theo. Mander.

Beeswax.—1st, H. Wood ; 2nd, J. R. Critchlow ; 3rd, Wm. Stendall ; h.c., Miss F. E. Smith.

Twelve 1-lb. Sections (labourers only).—1st, Felix Bridgett, Kingsley Holt, Staffs.

Twelve 1-lb. Jars Extracted Honey (labourers only).—1st, W. Croome, Lichfield ; 2nd, Felix Bridgett.

OPEN CLASSES.

Six 1-lb. Jars Extracted Honey.—1st, W. Woodley, Beedon, Newbury ; 2nd, H. F. Beale, Andover ; 3rd, Rev. H. F. Goffe, Thoresway, Caistor ; v.h.c., S. Cartwright, Shawbury ; c., H. Wood.

Twelve 1-lb. Sections.—1st, W. Woodley ; 2nd, H. F. Beale ; Rev. H. F. Goffe ; v.h.c., S. Cartwright ; c., H. Wood.

Twelve 1-lb. Jars Extracted Honey.—1st, W. Woodley ; 2nd, H. F. Beale ; 3rd, P. H. Rawson, Market Drayton ; v.h.c., S. Cartwright ; h.c., J. R. Critchlow.

Twenty-four 1-lb. Jars Extracted Honey.—1st, Rev. H. F. Goffe ; 2nd, G. H. Baddeley, Newport ; 3rd, H. Wood.

Collection of Hives and Appliances.—1st, H. Coltman, Burton-on-Trent ; 2nd, G. H. Varty, Etwall, Derby ; v.h.c., Messrs. Tom B. Dobbs & Co., Wolverhampton.—*Communicated.*

HONEY SHOW AT NESTON, WILTS.

The fifteenth annual exhibition of the Atworth and District Horticultural and Cottagers' Show was held on August 2 in Neston Park, as usual, by permission of the President of the Society, Mr. G. P. Fuller. The promoters were again favoured with fine weather, and, judging from the number who paid for admission, this year's exhibition cannot fail to be regarded as very successful. The bee and honey tents attracted much attention. Mr. Burtt, of Gloucester, being the judge of the honey department, paid a tribute of praise to the apicultural portion of the show, and said the exhibits of comb honey were splendid ones. He could not but be aware that some one had instructed the exhibitors in bee-keeping, and Mr. Spencer was to be congratulated on his efforts. Mr. T. Owen, Mrs. H. Frankham, and Mr. J. W. Spencer gave lectures at intervals on bee-keeping. There were the usual amusements in the way of roundabouts and shooting galleries, and the Corsham Band played lively selections. Mr. Hann, of Bath, and his company also gave an excellent variety performance. Mr. Lavington, Bathford, catered. The following were the awards :—

Observatory Hive with Queen and Bees.—1st, F. Swain ; 2nd, W. Frankham.

Twelve 1-lb. Sections.—1st, W. Morris ; 2nd, W. Frankham ; 3rd, T. Brown.

Six 1-lb. Sections.—1st, W. Mizen ; 2nd, F. Swain ; 3rd, F. Davis.

Twelve 1-lb. Jars Extracted Honey.—1st, R. Fuller ; 2nd, F. Brown ; 3rd, T. Clark.

Six 1-lb. Jars Extracted Honey.—1st, W. Mizen ; 2nd, F. Brown ; 3rd, E. Brown.

Collection of Comb and Extracted Honey.—1st, H. Frankham ; 2nd, W. Morris.

Super of Honey.—1st, E. Brown.

Shallow Frame of Comb Honey.—1st, T. Clark ; 2nd, R. Fuller ; 3rd, W. Mizen.

Super of Honey Comb.—1st, H. Frankham ; 2nd, W. Mizen.

Single 1-lb. Jar Extracted Honey.—1st, H. T. Beale, Andover; 2nd, E. Brown, Corsham; 3rd, W. Norris, South Wraxall.

Single 1-lb. Section—1st, H. T. Beale; 2nd, H. Seamark, Willingham; 3rd, W. Norris.

Beeswax.—1st, W. Norris; 2nd, H. Frankham; 3rd, F. Brown.

Greatest Number of Queen Wasps.—1st, Frank May; 2nd, F. Rogers.

(Non-previous Winners in Mr. Spencer's Class.) *Three 1-lb. Jars and Three 1-lb. Sections.*—1st, A. J. Toms, Bradford-on-Avon; 2nd, G. J. Davis; 3rd, V. Sloper.

Observatory Hive (Members only).—1st, T. Clark; 2nd, F. Swain.

Three 1-lb. Jars Extracted Honey (non-previous winners only).—1st, H. Sloper; 2nd, A. J. Toms; 3rd, W. Mizen.

Three 1-lb. Sections Extracted Honey—1st, W. Mizen; 2nd, Mrs. Frankham; 3rd, A. J. Toms.—(*Communicated.*)

HELSBY (CHESHIRE) SHOW.

The annual exhibition of honey in connection with the Helsby Flower Show took place on Saturday, August 5. Mr. W. E. Little, Chester, acted as judge, and made the following awards:—

Six 1-lb. Jars Extracted Honey. (*Open*).—1st, H. F. Beale, Andover; 2nd, Rev. H. Goffe, Thoresway, Lincs.; 3rd, A. Thomas, Frodsham; h.c., A. Goodice and J. M. Hainaman.

Six 1-lb. Jars Extracted Honey. (*Local.*).—1st, A. Thomas, Frodsham; 2nd, P. Huntington, Helsby; 3rd, E. B. Steel, Frodsham; h.c., J. M. Hainaman, Rev. E. Charley, and A. J. Briant.

Beeswax. (*Open.*).—1st, J. Berry, Llanrwst.—(*Communicated*).

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

NOTES BY THE WAY.

[3742.] The continued heat and drought during the month of August has burnt up every vestige of white clover-bloom. The only break was a thunderstorm last week, but the thirsty earth soon absorbed and evaporated the moisture left by the rain, and we are as "dry" as before, with the only consolation that it is grand weather for the ingathering of the corn harvest. Some large farmers have finished their corn harvest within three weeks, and given one more week of dry weather, harvesting will be finished in this district.

Current Prices for Honey.—I thank those who have given their thoughts and ideas on the subject. In the foot-note to my remarks on page 261, our Editors refer to the impossibility of establishing a uniform rate of prices of British honey, and further say, that I, along with others, have "an ideal price," which, however, differs widely among bee-keepers themselves. Now, speaking for myself, let me say I do not expect a uniform price for a multiform quality and quantity. I have seen sections of honey which contain some 11 oz. to 12 oz., dark in colour (and I should suspect strong in flavour), such as ought not to be put on the market at any price—but these need not be taken into account at all. As regards *ideal* prices, we do not expect to meet with the "ideal" on this mundane sphere; but if we can get market value for superior produce I am satisfied; and it is chiefly in the interest of small bee-keepers, who have a few dozen sections or bottles to sell every season, that the quotations of prices current for honey would be useful. The American journals devoted to the craft give weekly, fortnightly, or monthly quotations of current prices of the products of the hive, why not ours?

I do not, nor do I suppose that any one else wishes our editors to *adjudicate* between the prices at which some think honey can be produced and the highest market prices, but there is abundant room for obtaining the prices in large towns where honey is fast becoming a staple article in many shops. Then, no doubt, our editors know the largest buyers of honey (wholesale buyers) in London. These would find them quotations. I would also like to say a word about those who buy in larger quantities, such as grocers and dairymen, to sell again. The wholesale buyer who will take your entire stock, large or small, ought to be treated somewhat differently to the grocer, by having a larger margin afforded him, seeing that although each party has to sell again, the "wholesaler" has afterwards to sell to grocers, &c., to sell again, while the other deals direct with the producer. Here is where an extra price should be charged for the benefit of the producer who, in this case, is selling to the middle-man direct. The system of grading might also be taught to honey producers if our editors could give us some reproductions of photographs of the real article.

Cleanliness in and about the apiary is of great importance in preparing honey for market. The wood of the sections should be scrupulously clean, and those who live in districts where the bees propolise and stain the sections should invest in a cleaner or use adhesive bands to hide up the stains. Simply putting sections in tin or cardboard cases be-

fore thoroughly scraping them is like putting a clean suit on a dirty man, and the dirt is exposed to the consumer as soon as the outer case is removed.

Moths and Bees.—I have had a few of the large wax moths, *Galleria cereana*, in my apiary. I had a straw skep which swarmed in June, and failed to re-queen itself, for it was queenless. This went on till the honey harvest nearly closed, when I observed the bees were restless and uneasy; so I turned up the skep, only to find a large number of moths in all stages of growth in it. The skep was, therefore, speedily destroyed, as the moths were hatching, and would soon have been paying nocturnal visits to other hives. I have discovered good traps for the moths, viz., bottles of sweet liquor placed on the top of hives in the evening, and removed in the morning, before the bees commence work.

Wasps.—These are not very numerous this season in this district. A few bottles used as traps have kept them under, for they do not seem to increase in numbers, although there is abundant food for them in the shape of flies, which are a pest this year.

Solar Extractors.—These, as Mr. Walter Reid says on page 241, are very useful in the apiary, and may be used with little trouble to the apiarist. Their use will also tend to reduce the number of wax moths. My "solar" is an improvised one; but another year, if all is well, I shall start better equipped for the melting. It is simply a large bell-glass placed in a box cut sloping to allow the sun to shine on the wax laid on the piece of tin placed in a large basin, which acts as the receiver. I have some nice cakes from the extractor of good colour, but not much aroma. I will see what the final melting up develops in the way of aroma before I decide if it shall grace the show-bench later on.—W. Woodley, *Beedon, Newbury.*

HEATHER IN THE ISLE OF MAN.

[3743.] I am sorry to trouble you so much, but I have no one to compare notes with or "talk bees" to, so ask advice and opinion whether you consider enclosed a good sample of heather honey. It is from a super containing eleven 9 in. frames which I extracted on August 9, and from which I extracted 68 lb. of honey.

It is also from my best hive and this hive, if weather continues so very fine, will, I hope, establish a new "record."—Lancelot Quayle, *Glenmay, Isle of Man, August* 19.

[The sample received is excellent in colour, consistency, and aroma. The flavour is much milder than that of the full-flavoured Scotch heather honeys, but—mainly on that account—it might, we think, be preferred by honey users in the south who consider the Scotch product too strong in flavour for frequent use.—Eds.]

THE "BATH BEE CASE."

[3744.] I note your remarks *re* the above on page 299 of B.B.J., and should it be thought advisable to raise a fund to continue the litigation or reimburse the unfortunate defendant, I shall be pleased to contribute a guinea towards same.—Wyckham Blackwell, *Hampton-in-Arden, August* 16.

[3745.] With reference to your comments on the "Bath Bee Case," in Bee Journal of August 3, I think you have taken the most sensible view, and if fund suggested is opened, will willingly give five shillings.

I have to work hard for my own living or I would give more.—Arthur Webber, *Chippenham, Soham, Cambs., August* 8.

DEALING WITH FOUL BROOD.

[3746.] Referring to your reply to my query (2223, p. 236) in Bee Journal for June 15, re foul brood, I examined the hive on August 8, and found it in a normal condition; not a trace of foul brood to be seen, and the hive was full of bees, while seven of the eight combs contained a great quantity of healthy brood. I therefore added two more drawn-out combs, one on each side, as the heather here is in full bloom and weather fine. My bees have done very well this season and honey is of a good quality.—R. N., *Westmoreland.*

(*Correspondence continued on page* 334.)

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Mr. Whiting's apiary seen on next page affords another view of a bee-garden, very workmanlike in appearance, and one where bee-craft is pursued as a business. We need not add anything to the interesting notes furnished by himself, except to say how useful it is to get an insight into the way in which successful apiary is managed, and to congratulate our friend on his success and on the possession of the "ideal bee-man's wife" of whom he is so justly proud. He writes:—

"In reply to your request for a few notes concerning my apiary, I cannot, like some of your readers, boast of being 'a born bee-keeper,' for I was born a saddler, as was my father and grandfather before me. In fact, my great-grandfather commenced business here as a saddler, about one hundred and fifty years ago, and it is still carried on by my brother and myself. But I must cut this short, or you will be asking, What has that to do with bees? Well, I commenced bee-keeping fifteen years ago by purchasing a swarm from an old skeppist, for the usual price charged, viz, gold (half sovereign). This said sum including instruction as to the mode of hiving swarms and the procedure in case of

a death in my family, &c. I am sorry to say superstition still hangs round the bee-hive in this locality. The vendor still boasts of having taught me all I know about bees. The first real gleam of light, however, as regards modern methods, came through my dropping across some bee books; among others I had Huber 'On Bees,' Cook's 'Manual,' Roots' 'A. B. C.,' and Dr. Bevan's work. Next I took the B.B.J. and *Record*, for I consider these essential to successful bee-keeping. I started it as a hobby, but soon found I had got hold of a self-supporting one; moreover, it was a hobby I soon learned to love. I now make bee-keeping a part of my business, aving about one hundred colonies, most of them in frame-hives, the whole of which are managed by my better half and myself, Mrs. Whiting being what I am proud to call an ideal bee-man's wife. She does all the light work connected with the apiary, of which there is a great deal, only known to those who understand bees. With the above number of hives we find plenty to do in the usual sixteen hours compressed in the bee-keeper's day during the busy season. I sell a large number of swarms—the majority going to the North of England and Scotland, and a few across to Ireland. I also raise a large number of queens.

"As regards 'honey production,' I work mostly for extracted honey, because of experience proving that this pays best. My largest take in one year was 1 ton 5 cwt., in 1895. I am also thankful to say I have never had foul brood in my apiaries, and I believe this locality is free from that pest, as I have 'taken up' cottagers' driven bees for the last seven years (averaging 200 skeps per year). This would be a sufficient means of detecting it had there been any in the district. In this way I am constantly infusing fresh blood among my bees. This feature I consider most essential to success. I am a strong advocate of our native race, and as an all-round bee for this climate do not think it can be beaten.

"Referring to the site of my apiary, it is the best view the photographer could get, the domestic hive being situated in the front of it; it therefore became impossible to get in all the hives. The wire fence seen in photo was put up with the object of causing the bees to rise in their outward flight, as the hives are only ten yards away from the high road, with a large amount of traffic always passing, it being the main road to Clare. The figure on the left of the picture is that of my wife; on the right, my son, who not only thought he ought to appear himself, but fetched his grandmother too. The other figure represents the writer. I may mention that I have been honoured by giving lectures and demonstrations on modern bee-keeping at our local shows for several years, in connection with the

MR. C. WHITING'S APIARY, HUNDON, CLARE, SUFFOLK.

West Suffolk County Council; I also hold the offices of parishioners' churchwarden and overseer for the poor, for this and an adjoining parish, besides being trustee to a charity, so you will probably agree that I have no idle time on hand; nor do I complain, for it is a pleasure to have plenty to do, especially if one can be of any service to his fellow-man."

CORRESPONDENCE.

(*Continued from page* 332.)

TAKING HUMBLE BEES' NESTS.

[3747.] Could you inform me through the B.B.J. what is the best way to take a nest of humble bees from a meadow field about half a mile away from the garden? The bees are black in colour, the lower end of the abdomen being tipped with red. The nest is made of moss and is above the ground, and, so far as I can judge, the bees seem to be quiet tempered. I would very much like to take them if I could, but not having any knowledge of the habits of the insect, I do not know the way to go about it. I can handle our honey bees' frame hive fairly well—I mean fairly when there is none better—but have never seen an "expert" at work yet, so that I have had to learn all I know from the "Guide Book" and the bee journals. I exhibited an observatory hive with queen and bees at our Flower Show last year, and would like to show the humble bees' nest in a small hive along with the other bees at the show which takes place this month, and, if successful, would try to keep them alive in my garden afterwards, if I could. If you can spare time for a little advice, I would ask (1) Which is the best way to proceed and what time would be best to begin the job—early, late, or midday? (2) What kind of hive or box would suit best to put the nest in? (3) Could I feed them as we do hive bees? (4) Would they winter in the same way that other bees do—with covering over, &c.?

Hoping to be excused for giving you so much trouble.—DONALD MCGEACHY, *Pennymuir Farm, Oban, August* 16.

[Deeming that the above would be of general interest to readers we forwarded the letter to our esteemed contributor, Mr. Sladen, who is not only an authority on the subject but a thorough "expert" at handling humble bees, as his prize exhibit at the recent "Royal" show proved. The following is Mr. Sladen's reply.—EDS.]

"From the above description I should say your correspondent has probably found a nest of *Bombus derhamellus*, a mild-tempered species of humble-bee, more common in Scotland than in England. If the nest is not in a too advanced stage there will be no diffiulty in taking it, and exhibiting it in the way proposed. Early in the afternoon is, perhaps, the best time to commence operations, and so far as the plan of going to work, I should say to Mr. McGeachey, provide yourself with two ordinary 1-lb. white glass jam-jars with narrow necks, and two stout pieces of pasteboard to cover them. Proceed, very carefully, to remove the moss covering from off the nest, disturbing the bees as little as possible, and catch each bee, as it flies out, in one of the bottles, putting the card cover over the mouth to keep it in. Now invert this jar over the second one; withdraw the covers out and let the bee fly down into the lower jar; cover the latter over quickly with one of the covers and you will have the top jar free for catching another bee, which may be transferred to the other jar as before. Thus, in time, you will catch all the bees in the nest, and have them safe in one of the jars. A little shaking may be necessary to get the bee in the top jar amongst the others in the bottom one, and some of the bees in the latter may rise into the top jar unless the piece of card is slipped in between them just at the right moment. The nest should not be disturbed sufficiently to bring out more bees than about one at a time, or some may fly away and get lost while you are bottling the others. You might have an assistant with another jar and cover to catch the bees you miss. If the species is the one I imagine, you will find the bees very timid and not in the least inclined to attack you, so that it will not be necessary to wear a bee-veil. You will find, however, that some of the bees have a knack of lying on their backs amongst the moss, quite motionless, feigning death, but active enough to inflict a painful sting the instant they are touched. The simplest way to handle such bees is to pick them up with a corner of one of the pieces of card and drop them into the jar with the others. Immature bees can be quickly disposed of in this manner.

"The old queen-mother which founded the nest may be distinguished from the workers by her larger size, somewhat bald body, and very ragged wing-tips. Put her with the workers in the jar. There may be some young males or drones in the nest. These may be known by their long antennæ and bodies, and in *B. derhamellus* have a dash of yellow in the hairs on the front of the thorax and on other parts parts of the body. The drones cannot sting. There may also be some young queens; these are coloured like the workers, but are much larger in size. As soon as you have all the bees safely transferred into one of the glass jars, the comb (containing brood, pollen, and honey) may be removed and placed in a box, having a small hole at the bottom of one side for the ingress and egress of the bees. Fresh nest material should be supplied in place of the original moss of the nest, which will be found to be teeming with microscopic vermin of all kinds. The best substitute is tow or old rope, shredded and cut up into short lengths. The bees may be dropped on to the nest, preferably when they become drowsy an hour or two later, as there is little risk of

the brood getting chilled in an ordinary summer temperature at this time, and you avoid losing lively bees that would otherwise fly away. A sheet of glass should be placed over the top of the box immediately after the bees have been dropped in, and the entrance hole should be blocked until the following morning, when, if it is opened and the weather fine, the workers will soon work in and out as usual. You can see through the glass what is going on inside the box.

"It will be best to keep the box in the old spot where the nest was found, especially if the workers are old, because, if it is removed to a new spot, these old workers will not return to it. No anxiety need be felt if you fail to secure the old queen, as at this time of year the nest will continue to prosper almost as well without her. Nests of humble bees cannot be kept alive through the winter, as none of the inhabitants survive the winter except the young queens, which hibernate solitarily, and emerge the following spring to start new nests of their own. I hope you will be successful in taking and exhibiting the nest, and shall be pleased to reply to any further questions.—F. W. L. Sladen, *Ripple Court, Dover, August* 9, 1899."

METEOROLOGICAL

Observations taken at Duddington, Stamford, Northants, for the Week ending August 19, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Aug. 13....	30·31	67·0	76	47	29	60·6	—
„ 14....	30·27	65·6	76	54	22	64·3	—
„ 15....	30·11	69·1	84	53	31	67·6	·55
„ 16....	30·13	63·0	71	54	17	62·0	—
„ 17....	30·09	62·5	71	55	16	62·5	—
„ 18....	30·13	62·9	66	56	10	60·7	·03
„ 19....	30·18	62·2	74	57	17	65·0	·05
Means	30 17	64·5	74·0	53·7	20 3	63·2	·63*

* Total ·63 in.

Mean vapour tension, 0·396 in.; mean relative humidity, 65 per cent.; mean temp. of the dew point, 52°·4. The rainfall, viz., ·63 in., =14,252·49 gallons, or 63·63 tons to the acre, or 3·15 lb. to the square foot. For the week ending August 12, the mean temp., viz., 61°·7, was +0°·5, and the rainfall, viz., ·02 in., −·58 in. The mean temp., July 30 to August 12, viz., 64°·0, is +2°·7, and the rainfall, viz., ·04 in., is −1·21 in. Rain fell on 12 out of 42 days, on July 2 to August 12, to the amount of ·67 in., which is −2·95 in. Rain fell on 51 out of 133 days, April 2 to August 12, to the amount of 6·13 in., which is −3·32 in. Rain fell on 100 out of 224 days, January 1 to August 12, to the amount of 11·08 in., which is −3·48 in. Two thunderstorms, one of which was severe, passed over the village between 6 and 7 p.m. on the 15th. The lightning was vivid. It is estimated that ·50 in. of rain fell in 45 minutes, which amount equals 11,311·50 gallons, or 50·50 tons to the acre, or 2 50 lb. to the square foot.

Fred. Coventry.

Duddington, Stamford, August 21.

Queries and Replies.

[2256.] *Preventing Swarming: A Beginner's Queries.*—Kindly assist me—a bee-keeper for about six months—by answering the following queries:—1. Is there an association in Glamorgan; if so, who is the secretary? 2. Is it advisable to introduce a new queen now or wait until the spring? 3. If a box of shallow-frames with stocks is put under the brood-nest in a "W.B.C." hive during the swarming time, would it prevent swarming? Of course sections would be placed above the brood-nest as usual. 4. I have one hive in which owing to the frames being placed too far apart the bees have built combs between the frames, and also very irregularly. What would you recommend me to do? Should I re-arrange the hive now or in the spring?—H. B., *West Cross, Glamorgan.*

Reply.—1. The Hon. Sec. of the Glamorgan B.K.A. is Mr. E. Thornton, Bridgend, Glamorgan. 2. If re-queening is really desirable it should be done without more delay than necessary. 3. Space given below the brood-chamber will tend very much to retard swarming, but the box of shallow-frames so used would need to be removed above the body-box before the queen had begun to fill the combs with eggs. The plan is, therefore, hardly suitable to a beginner unless the hive is specially constructed for that method of swarm prevention. 4. The combs should be pared down to the proper thickness before starting to feed up or prepare for wintering.

[2257.] *Removing Propolis from Section-racks.*—Kindly advise me through your valuable paper as to the best method of removing propolis wax, &c., from section-racks, so they may be ready for another season. 2. I have a rack of unsealed sections which I wish to put on a hive for the bees either to seal over or to carry the honey below. The bees are, however, so vicious that I can do nothing with them. Should I wait for a time till they become quieter? 3. How long will the unsealed honey keep good?—F. E. Paine, *Hampstead, N.W.*

Reply.—1. We find broken pieces of strong window-glass—used as a scraper—answer as well as anything we know of for the purpose named. 2. There is no hope of getting sections sealed so late in the season as this in your district. By proceeding quietly, and the judicious use of a little smoke, there should be no difficulty in setting on the unsealed sections. 3. The unsealed honey should be extracted this autumn if not given to the bees as proposed.

[2258.] *Bees in House Roof.*—There is a swarm of bees in one corner of my dwelling-house under the rafters. This is the third summer the bees have been located there, and so far they have not been disturbed. 1. Will

you, as experts in the management of bees, kindly advise me as to the best plan for securing the honey, and when is the best time to do so? 2. What quantity of honey do you think there should be stored up? 3. Do you know of any one in this district who could do this for me, and the probable cost of same. EDWARD A. FREEMAN, *Chipping Sudbury, Glos.*

REPLY.—1. In the above, reference is made only to "securing the honey," there being no allusion to the bees, nor is it even stated whether our correspondent is a bee-keeper or intends to become one. We therefore ask for a line on these points before troubling with details of how to secure the honey only. 2. It is so entirely a matter of speculation, for those who have not seen how the bees have worked, that guessing is useless. 3. Perhaps some reader residing in the district will kindly volunteer to assist our correspondent.

[2259.] *Bees Superseding Old Queen.*—On May 23 a very small swarm issued from one of my hives, the queen of which I computed was about four years old; this swarm settled upon the ground about twenty yards from hive (the fact of settling on ground further convinced me of the queen being aged). I fed the swarm judiciously after hiving, and in due course put sections on, with a few partly-filled sections from other hives to induce the bees to take possession, but they have not gone up. On August 9, having returned from a week's holiday, I examined the brood-chamber, and find a sealed queen-cell half-way up on middle frame. I should much like to know (by post, as if I wait for issue of JOURNAL it may be too late)—1. Will it be advisable, owing to lateness of season, to let them swarm, or shall I destroy the queen-cell, and take my chance of the queen surviving the winter and the inevitable spring-dwindling? 2. Or shall I allow them to swarm and return same after killing the old queen? I have the "Guide Book" and also several years' B.B.J., but do not see anything likely to assist me in above matter.—F. D., *Wembley, August* 9.

REPLY.—1. There is no fear of the bees swarming so late in season. If the sealed cell is occupied and a young queen hatches out while the old one remains in the hive, the inference is that she is being deposed or superseded by the bees themselves. Consequently, if the young queen is fertilised and begins to lay, the old one will disappear.

[Above reply was sent by post.—EDS.]

[2260.] *How Foul Brood is Spread.*—1. I am sending per parcel post some comb from a beeless skep and shall feel obliged if you will say if you can detect foul brood in it? I found what I considered unmistakable evidence of the disease. The owner has four other stocks—two in frame-hives and two skeps. The skep from which comb was taken has been left exposed for the bees—his own and others—to clear out. 2. Would you advise him to keep the skeps or drive them? I am glad to say I have successfully overcome the disease; my one infected stock is now quite healthy, with plenty of brood and stores for the winter. I detected it in the very early stage. Three bee-keepers have lost their bees—four stocks in all. I also found it in two out of three frame-hives in another apiary, so it is all over the place.—D. D. B., *Hull, August* 17.

REPLY.—1. Comb is affected with foul brood of old standing. 2. If the skeps are suspected or show indications of disease, it would be well to drive the bees out and examine combs as far as it can be done, but not otherwise. We are glad to hear of our correspondent's success in curing his own affected stock, but in case of any further "samples," we must request about one-tenth of the amount of comb sent the other day. To get rid of such stuff involves little trouble in the country, but at an office in the West End of London it is a positive nuisance to have any more of it than we can possibly help, and correspondents should bear this in mind.

Bee Shows to Come.

August 25 and 26, at Dunfermline, N.B.—Bee and Honey Show, West of Fife and District B.K.A., in connection with the Horticultural Society. Schedules from Geo. Weston, Sec., Grant's Bank, Dunfermline. **Entries closed.**

August 29 at Northwich.—Cheshire B.K.A. Show, in connection with the Cheshire Agricultural Society. Open classes for honey, wax, and single hives.

August 30 at Dumfries.—Honey Show of the South of Scotland B.K.A. in connection with the Exhibition of the Horticultural Society. Four Open Classes for "Threes" and "Singles."

August 31, at Abergwili.—Honey Show in connection with the Horticultural Exhibition. Open classes for single 1-lb. jar; prizes, 10s., 7s. 6d., 5s., 2s. 6d. And single 1-lb. section; prizes, 7s. 6d., 5s., 2s. 6d. No entry fee. Schedules from J. Jones, 3, Gifre-gardens, Abergwili. **Entries close August 26.**

August 31, at Bradford Abbas.—Yetminster District B.K.A. Annual Show in conjunction with the Bradford Abbas Flower Show. Open classes for Single 1-lb. Sections, four prizes (entry free), and for Best Frame-hive, two prizes (entry fee, 1s.).—Schedules from G. Leeding, Hon. Sec. B.K.A., Bradford Abbas, near Sherborne, Dorset. **Entries close Aug. 26.**

September 6 and 7 at Birkenhead.—Cheshire B.K.A. Show, in connection with the Wirral and Birkenhead Agricultural Society. Liberal prizes for hives, honey, &c. Eight classes, including one (free entry) for 1-lb. jar of honey with four prizes. Honey tent in good position in show yard. Bee lectures and demonstrations.

September 7, in the Town Hall, Castle Douglas.—Annual Show of the Galloway Horticultural and Honey Society. Open classes, with liberal prizes for three 1-lb. jars, and for three 1-lb. Sections. Schedules from Mr. Thos. Myers, Castle Douglas, N.B. **Entries close September 2.**

September 13 and 14 at Derby.—Eighteenth annual show of the D.B.K.A., in connection with that of the Derbyshire Agricultural Society. Eight open classes, including two with free entry for 1-lb section and 1-lb. jar of honey. Schedules from F. Walker, hon. sec. D.B.K.A., 64, Gerard-street, Derby. **Entries close August 31.**

September 13 and 14, at Edinburgh.—Midlothian B.K.A., Annual Honey Show in connection with the Caledonian Horticultural Society's Exhibi-

tion in the Waverley Market. Seventeen open classes. Schedules from Wm. Weir, Heriot, Midlothian. **Entries close September 6.**

September 30 to October 7 at the Agricultural Hall, London.—Honey Show in connection with the fourth Annual Exhibition of the Grocery and Kindred Trades. Classes (open to master grocers only) for comb-honey in sections and for extracted honey. (See advertisement on page v.) **Entries close September 16.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Mr. Wm. Herrod, Horticultural College, Swanley, Kent, August 11, writes as follows:—"DEAR SIR,—I have received so many letters of congratulation from old and esteemed friends in connection with the recent testimonial presented to me by the students of the Horticultural College, Swanley, that I find myself quite unable to reply to each individually. Would you, therefore, kindly allow me, through the columns of your valuable paper, to take the opportunity of heartily thanking my numerous friends for their kind wishes.—I am, yours faithfully, W. HERROD.

W. DOLMAN (Widmerpool).—The sample of honey sent is good in flavour, colour, and density.

W. F. (Staffs).—*Photos of Apiaries.*—We can reduce a photo 12 in. by 9 in. to the size required for the "Homes of the Honey Bee" series, but a half-plate picture, 6½ in. by 4¾ in., is the most suitable size for reproduction by the half-tone process.

FRANK KNIGHT.—*Honey for Showing.*—The sample sent is not bad in flavour, but, apart from its dark colour, it is not up to "show" standard.

T. STEWART (Cambs).—*Suspected Comb.*—There is nothing in comb sent to warrant the suspicion of foul brood.

W. X. (Pelsall).—There is foul brood in one of the only two sealed cells in comb sent. The other cell contains a dead larva in normal condition.

C. R. WYMER (Greenwich).—*Dark Honey for Bee-food.*—1. Set the vessel containing the granulated honey in a pan of hot water till it becomes liquid, after adding about a pint of warm water to 4 lb. of honey. In other words, to be suitable as bee-food the honey should be thinned down to the consistency of ordinary sugar syrup. 2. All bee-food should be medicated as a preventive against foul brood.

G. O. B. (Guildford).—The discolouration of comb in section sent is simply caused by the queen depositing drone eggs in the cells, and a batch of drones being reared therein.

S. O. (Torquay).—*Number of Frames for Wintering Bees on.*—It is undoubtedly a good plan to remove from the hive all frames not covered with bees when preparing the hive for winter, and—as stated in "Modern Bee-keeping" — six standard frames will be sufficient for a strong colony to winter on. At the same time, it need not cause you any alarm to find "ten frames crowded with bees" at end of August. There will be a considerable diminution in the number of bees before the time arrives for winter packing, and six frames will probably be as many as they will cover well.

J. E. (Cornwall).—Of the six samples of comb sent, No. 1 is badly affected with foul brood. 2, 3, and 5 are free from disease, while Nos. 4 and 6 have it in mild form.

P. J. MORRIS (Hendon).—If you have never seen bees driven, and are, as we suppose, entirely inexperienced in bee-keeping, we strongly advise the purchase of a guide book on bees before attempting to start on a bee-driving expedition.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

WALLFLOWERS, Strong Plants, 100, 1s. 6d.; 50, 10d., free. W. WARWICK, Milton, Portsmouth. 411

WANTED, Light PORTER having knowledge of bee-keeping. ANTHONY & CO., Chemists, Cardiff. 400

WANTED, "The American Bee Journal," vol. 1898. PENN, Havelock-road, Birchfields, Birmingham 403

EXTRACTED HONEY, 5d. and 6d. Samples 3d. each. SALMON, Bee Expert, Haresfield, Gloucestershire. 402

STRONG HEALTHY STOCKS, in Skeps, about 30 lb. each, 12s. 6d. W. A. WOODS, Normandy, Guildford. 407

GUARANTEED HEALTHY DRIVEN BEES, 1s. 3d. lb., with Queen. Good Queens, 2s. each. Cases returnable. WOODS, Normandy, Guildford. 404

DRIVEN BEES, a few more lots, 5s. 6d.; packed free. JOHN WALTON, Honey Cott, Weston, Leamington. 401

1,000 lb. good light HONEY, 6d. lb.; sample 3d. Apply, JOHNSON & SON, Soham, Cambs. 410

WANTED, cash offers, few dozen SECTIONS, beautiful white CLOVER HONEY. C. SMITH, Wheatacre, Beccles, Suffolk. 409

HONEY, Clover and Sainfoin, 56s. cwt. Tins and crates free; 12-lb. tins, 6½d. lb.; sections, 7s. doz. Samples, 2d. H. MAY, Kingston, Tetsworth. 408

HONEY.—FOR SALE, about 1½ cwt. of CLOVER HONEY, and 200 beautifully sealed Sections. Offers invited. Heather honey shortly, bees on the moor. JOHN BARKER, Winton, Kirkby Stephen. 406

HEALTHY DRIVEN BEES, with young Queen, at 1s. 3d. lb. Box returnable, or 1s. Young Queens at 2s. each. Prime Sections, 7s. dozen. E. GARNER, Broom, near Biggleswade, Bedfordshire. 405

CHOICE Young BLACK QUEENS. Natural raised, tested, and safe arrival guaranteed, 2s. 6d. each, post free. Also a few lots of Driven Bees at 1s. 3d. per lb., in 4 or 5 lb. lots, with Queen. Boxes to be returned, carriage paid. A. J. CARTER, Newfields, Billingshurst, Sussex.

FOR SALE, Three good, strong Stocks of Bees, '99 Queens, Two empty Hives, Supers, Excluders and Combs, Guinea Extractor, Two Feeders, One Smoker, Modern Bee Farm, Guide Book. All guaranteed in very good condition. What offers? JOSEPH STENSON, 10, St. George-villas, Shrewsbury-road, Harlesden, London, N.W.

Prepaid Advertisements (*Continued*).

FOR SALE.—"The British Bee Journal," 4 vols., strongly bound, 1887 to 1890; 6 vols., unbound, 1891 to 1896 (4 numbers of latter missing); Thorley's "Bee Book," 1774; Cotton's "My Bee Book," 1842; Langstroth "Hive and Honey Bee," 1865; Cook's Manual, 1882; Simmin's "Bee Farm," 1887; 2 Cheshire's Diagrams, mounted on cloth, with key. What offers? Address, Capt. AYLEN, R.N., Coryton Villa, Plymouth. 412

QUANTITY good well-filled SECTIONS FOR SALE, 8s. doz. AVERY, Ripley, Surrey.

HONEY LABELS (250) with your name and address, from 2s. 6d. GUEST, King's Norton. 394

DRIVEN BEES, 1s. 3d. lb.; order early. HERROD, Trentside Apiary, Sutton-on-Trent, Newark. 376

HEALTHY DRIVEN BEES in 4 or 5 lb. lots, 1s. 3d. lb. Boxes to be returned. E. LONG, Fulbourne, Cambs. 386

SOME Healthy STOCKS in straw hives FOR SALE, also a quantity of EXTRACTED and COMB-HONEY. Apply, BROWN, Sharow Cottage, Ripon. 390

PROLIFIC QUEENS, Nuclei, Stocks (Skeps and Frame Hives), and Swarms. E. WOODHAM, Clavering, Newport, Essex. 363

ENGLISH MADE HONEY JARS (1-lb. screw-cap), 14s. per gross; sample, 6d. JAS. DYSON, Stainforth, Doncaster. F.N.

"W.B.C.' HIVES.—Make your own at third the cost. For particulars, send stamped addressed envelope. PRIDEAUX, Whitchurch, Salop. 302

QUEENS, STOCKS, NUCLEI, and SWARMS. A few more orders can be accepted. List free. Rev. C. BRERETON, Pulborough, Sussex.

FINE tested ENGLISH QUEENS, bred from my selected strain, in introducing cage, post free, 5s. each. Ready now. W. WOODLEY, Beedon, Newbury.

CHOICE YOUNG QUEENS from docile, prolific, and industrious stock, 3s. 9d. Delivered safely in introducing cages. Reduction on quantity. Circular post free. EDWARDS, "Beecroft," Ashford, Staines. 370

23RD YEAR.—Small SWARMS, with fertile Queens, 5s. 6d.; Three-frame NUCLEI, with Bees, Queen, and Brood, 12s. 6d.; LAYING 1899 QUEENS, 3s. 9d. Delivered. ALSFORD, Expert, Blandford. 369

FURTHER REDUCTIONS. TRANSPARENT CELLULOID QUILTS, post free, 1s. 6d.; CELLULOID QUEEN EXCLUDERS, post free, 1s. 6d. R. H. COLTMAN, Bee-Appliance Maker, Burton-on-Trent.

HEALTHY DRIVEN BEES at 1s. 3d. per lb., not less than 4-lb. lots with queen. Boxes returnable; also young Fertile Queens at 1s. 6d.; post free; ninth season. R. BROWN, Flora Apiary, Somersham, Hunts. 380

BRICE'S RELIABLE QUEENS. Well-known strain, one quality, one price. Mated tested Queen, 5s. 6d., post free in perfected travelling and introducing cage. Safe arrival guaranteed. HENRY W. BRICE, 100, Brigstock-road, Thornton Heath.

2/2.—BEE GLOVES, as recommended by the great bee authority the Rev. W. E. Burkitt, 2s. 2d. per pair, post paid. Special terms for wholesale buyers. Manufactured by EDWARD REYNOLDS, Glove and Gaiter Manufacturer, Andover. 257

STRONG three-frame Nuclei 1899, tested QUEENS, 10s. 6d. each; fine tested 1899 Queens, 3s. 6d. each. Safe arrival guaranteed. BEES 1s. 6d lb. for 5 lb. lots or over, with queens. Guaranteed healthy. Packages to be returned. WHITING, Valley Apiaries, Hundon, Clare, Suffolk. 368

HEALTHY DRIVEN BEES, in 5 lb. lots, 5s. 9d.; single lots, 3s. each. Boxes returnable. Satisfaction and safe arrival guaranteed. Also good, reliable QUEENS from driven stocks, 1s. 6d. and 2s. each. Give trial. Approval. SPEARMAN, Colesbourne, Andoversford. 364

Prepaid Advertisements (*Continued*).

LACE PAPER for SECTION GLAZING (something new), in white, pale green, and pink; 1 in. wide. 100 strips, 7d.; 200, 1s. 2d.; 300, 1s. 6d.; 500, 2s. 3d.; 1,000, 4s. Also LACE BANDS (lace edge both sides), 2⅞ and 3⅝ in. wide. White: 100, 1s. 3d.; 200, 2s. 3d.; 300, 3s.; 500, 4s. 9d. Pink and Pale Green: 100, 1s. 6d.; 200, 2s. 9d.; 300, 4s.; 500, 5s. 6d. (Samples of each kind and colour, 3d.) All post free. W. WOODLEY, Beedon, Newbury.

REQUEEN NOW, if you wish for Early and Large Stocks next Spring. **FINEST IMPORTED ITALIAN, 5s.; FINEST TESTED ENGLISH, 5s.; FINEST IMPORTED CARNIOLAN, 6s.; FINEST IMPORTED CYPRIAN, 8s.** In self-introducing cages. Safe arrival guaranteed. Cash with order. 5 per cent. discount on 6 Queens. CHAS. HOWES, Brecknock-road, Knowle, Bristol.

SELF-CLOSING HONEY TINS.

1 lb., 13s. gross, 1s. 3d. doz.; 2 lb. 21s. gross, 2s. doz.
4 lb., 31s. gross, 3s. doz.; 7 lb., 46s. gross, 4s. 6d. doz.

HUNT & HUNTLEY,
2, Bridge Street, Worcester.

ARTHUR T. PROCTOR,
LEICESTER-ROAD, GREAT WIGSTON, near LEICESTER.
(Five years with Chas. Redshaw).

STOCKS! SWARMS and QUEENS a Speciality! STRAW SKEPS, from 1s. 6d. SMOKERS, from 2s. GLASS for 1 lb. Sections, 4¼ by 4¼, 2s. 6d. gross. "W.B.C." TIN ENDS, equal to any in the trade, and better than most, 3s. 6d. gross. PARCHMENT (in squares), first quality, 1s. lb.

All other Requisites at equally low prices.

N.B.—All goods to the value of 5s. and upwards, Carriage paid. Prompt delivery of all orders.

SLADEN'S "ROYAL MAIDSTONE" PRIZE HIVE

(on the "W.B.C." plan; no plinths), as exhibited at the "Royal" Show, with two lifts and supers, 17s. 6d.

SPECIAL STRONG FRAMES,

with hardwood top-bars, extra thick between the uprights; top-bar cannot break with weight of honey, 1s. 6d. per dozen; 50 for 5s. 6d.

SLADEN'S HARDY and PROLIFIC ITALIAN BEES, also PLANTS and SEEDS for BEES.

Particulars on application.

Besides the above special articles, all BEE-KEEPERS REQUISITES are kept and Supplied Promptly at moderate prices. Orders of £5 in value carriage paid to any Station in England, £2 carriage paid to London.

GOOD ENGLISH HONEY WANTED.

F. SLADEN, Ripple Court Apiary, nr. Dover.

8TH SEASON.

IMPROVED CARBOLINE POMADE

THE PERFECT REMEDY FOR BEE STINGS which gives almost instant relief from pain and prevents inflammation. Price, per box, **1s.**

DIRECTIONS.

BEE STINGS.—Extract sting, and apply Pomade freely with a camel-hair brush; gives relief in a few seconds from the horrible smarting and burning inflammation.

PREVENTION.—Before opening hive give a few puffs of smoke (having previously rubbed the hands and wrists until they are covered with Pomade); reduces to a minimum the stinging of bees whilst manipulating.

To prevent robbing and exclude insects, paint the parts that rest on each other, &c., with Pomade.

Price, **1s.** per box.

Can be obtained from the principal Bee-Appliance Manufacturers and from the Manufacturer,

T. HOLLIDAY,
Astbury, Congleton.

Editorial, Notices, &c.

THE "BATH BEE CASE."

Since our reference to the above last week we have received the following letter. Readers will, therefore, now labour under no misapprehension regarding the actual facts of the case as it now stands :—

"3, Lower East Hayes,
Kensington, Bath,
August 25, 1899.

"DEAR SIRS,—I beg to thank you for your kindness in offering to assist me in my expenses in the recent case Kerby *v.* Pavy.

"As you know, the action was taken against me, and therefore the claim is only on my separate estate, which being of no value they can do nothing to compel me to pay them, although they had put the bailiffs in possession; but on receiving a letter from my husband, stating that the furniture, &c., belonged to him, they had them removed. I was also summoned to the County Court Office to be examined by the Judge, but without any benefit to them. I do not know what their next action will be, but my lawyer informs me they cannot do anything, and therefore I have very little to fear except the inconvenience I have been put to.

"I do not mean to say the action has not cost me anything—it has, a good amount. First, there was my solicitor's fee, £5; and also the loss sustained through having to sell the bees for much below their value, amounting in all to about £12 to £14.

"For any assistance you could render me I should be very grateful, and again thanking you for your extreme kindness.—I remain, yours faithfully, A. PAVY."

It will be seen by the above statement that the total cost of the proceedings to Mrs. Pavy—beyond having to part with her bees—does not reach a large sum, so moderate, indeed, is the amount, that if all readers who sympathise with her would send one shilling each, the sum would be met. We will be very pleased to receive and acknowledge contributions sent to this office.

DEVON BEE-KEEPERS' ASSOCIATION.

ANNUAL SHOW.

The second annual show of this Association was held at Exeter on August 18, in conjunction with the Devon and Exeter Horticultural Society's show. There was a large and tasteful display of bee-produce in all its branches, as also of hives and appliances, the high standard of last year's show being generally well maintained. By arrangement with the B.B.K.A., Mr. Jordan, of Bristol, acted as judge, and subsequently held an examination for third-class expert's certificates. Prizes were awarded as follows :—

Twelve 1-lb. Sections (twelve exhibits).—1st, C. Marks, Kingsbridge; 2nd, J. Seldon, Umberleigh; 3rd, H. Patey, Kingsbridge.

Three Frames of Comb Honey for Extracting (four exhibits).—1st, J. Trebble, South Molton; 2nd, J. B. Houle, Chittlehampton.

Single 1-lb. Section (nineteen exhibits).—1st, J. Seldon; 2nd, W. Snell, Eggesford Station; 3rd, C. Marks; 4th, H. F. Beale, Andover.

Twelve 1-lb. Jars Extracted Honey, Light (twenty exhibits).—1st, Miss Phillips, Kenton; 2nd, Rev. H. F. Goffe, Lincoln; 3rd, C. Marks.

Twelve 1-lb. Jars Extracted Honey, Dark (thirteen exhibits).—1st, A. W. Barker, Cockington; 2nd, W. H. Catford, Axminster; 3rd, Mrs. Woosnam, Newton Abbot.

Six 1-lb. Jars Granulated Honey (seven exhibits).—1st, J. Herrod, Newark; 2nd, Rev. H. F. Goffe; 3rd, E. E. Scholefield.

Bees' Wax (fourteen exhibits).—1st, Mrs. Woosnam; 2nd, W. Snell.

Display of Honey, &c. (four exhibits).—1st, J. Seldon; 2nd, W. H. Oliver, Exeter; v.h.c., J. Brown, Exeter.

Observatory Hive.—Colonel Walker.

Hives and Appliances.—J. T. Burgess & Son, Exeter; h.c., J. Trebble, South Molton.

All the above were open classes.

Bar-Frame Hive (open to amateurs of D.B.K.A.).—Rev. C. M. Rice, Marwood Rectory.—(*Communicated*).

SHROPSHIRE B.K.A.

ANNUAL SHOW AND HONEY FAIR.

The annual honey fair and exhibition of honey hives and bee appliances was held on August 23 and 24, in connection with the Shropshire Horticultural Society's twenty-fifth great fête, in the Quarry, Shrewsbury. Favoured with magnificent weather on both days, the success of this year's fête, taken as a whole, put in the shade every previous show hitherto held. We are told that on Thursday something like 80,000 persons were present.

The bee department was, as usual, well filled with a capital display of bee-produce, no less than 2,532 lb. of honey being staged in competition. It was also gratifying to note the marked improvement in quality, compared with that of last year. As a result of the honey fair, about 1,500 lb. of members' honey changed hands, several exhibitors disposing of the whole of their stock before the show closed.

The success of the department was very largely due to the unwearied efforts of Miss Eyton, Hon Sec. and Treasurer of the S.B.K.A., aided by the assiduous Hon. Exhibition Secretary, Mr. J. Palmer, of Ludlow, both of whom were indefatigable in their efforts to make the department as complete as possible.

Lectures on bee-keeping were delivered in a

detached tent at intervals, by Mr. Meadows, a good number of persons attending, and evincing their interest by putting questions to the lecturer at the close.

The duties of judging were undertaken by the Rev. J. F. Buckler, Bidston Rectory; Mr. Alfred Watkins, Hereford; and Mr. W. Broughton Carr, London; the following being their awards:—

OPEN CLASSES.

Twenty-four 1-lb. Sections.—1st, H. Wood, Paradise, Lichfield; 2nd, S. Cartwright, Shawbury; h.c., Phil. Jones, Church Stretton.

Twelve 1-lb. Sections.—1st, A. Hamer, Llandilo Bridge; 2nd, Phil. Jones.

Twenty-four 1-lb. Jars Extracted Honey.—1st, T. Simpson-Jones, Welshpool; 2nd, W. Spence, Newtown; h.c., F. Law, Pattingham.

Twelve 1-lb. Jars Extracted Honey.—1st, J. Morris, Bishops Wood; 2nd, W. Patchett, Thoresway; h.c., T. Simpson-Jones.

Twenty-four 1-lb. Jars Granulated Honey.—1st, M. Meadham, Hereford; 2nd, F. W. Norris, Cardington.

Collection of Extracted Honey from Various Sources.—1st, J. Bradley, Yockleton; 2nd, A. Beale, Meole Brace.

MEMBERS' CLASSES.

Twenty-four 1-lb. Sections.—1st, S. Cartwright; 2nd, Phil. Jones; h.c., A. Hamer.

Twelve 1-lb. Sections.—1st, Phil. Jones; 2nd, F. W. Norris.

Single 1-lb. Sections—1st, Phil. Jones; 2nd, A. Hamer; h.c, S. Cartwright.

Twenty-four 1-lb Jars Extracted Honey.—1st, L. F. Roese, Terneside; 2nd, S. Cartwright; v.h.c., A. Hamer; h.c, T. Pritchard, Bucknell.

Twelve 1-lb. Jars Extracted Honey.—1st, Mrs. Page, Oreton; 2nd, S. Cartwright; v.h.c., P. Graham, Montford; h.c., L. F. Roese.

Twenty-four 1-lb. Jars Dark Extracted Honey.—1st, Phil. Jones; 2nd, E. Oakes, Broseley; v.h.c., H. Wood; h.c., Mrs. Page; c., L. F. Roese, B. G. Brocklehurst.

Novelty in Honey or Wax.—J. Bradley.

ARTISANS' CLASSES.

Twenty-four 1-lb. Sections.—1st, E. Brookfield, Myddle; 2, Phil. Jones; v.h.c., A. Hamer.

Twelve 1-lb. Sections.—1st, Jesse Hammond, Hope Bowdler; 2nd, Phil. Jones; v.h.c., E. Brookfield; h.c., P. Graham, L. Powell.

Twenty-four 1-lb. Jars Extracted Honey.—1st, C. Clark, Cloverley; 2nd, P. Graham; v.h.c, F. Parton; h.c., Phil. Jones; c., E. Oakes.

COTTAGERS' CLASSES.

Twelve 1-lb. Sections.—1st, G. Croxton, Yorton; 2nd, Jasper Jones, Church Stretton.

Twelve 1-lb. Jars Extracted Honey.—1st, G. Croxton; 2nd, G. Lloyd, Overley; v.h.c., Mrs. Powell.

Six 1-lb. Sections.—1st, Jasper Jones; 2nd, T. Croxton; 3rd, G. Croxton; h.c., Mrs. Powell.

Six 1-lb. Jars Extracted Honey.—1st, G. Croxton; 2nd, G. Lloyd; 3rd, Jasper Jones.

Single 1-lb. Jar Extracted Honey.—1st, G. Croxton; 2nd, Mrs. Powell; v.h.c., J. S. Croxton.

Single 1-lb. Section.—1st, Jasper Jones; 2nd, Mrs. Powell; h.c., G. Croxton; c, T. Croxton.

OPEN CLASSES.

Honey Trophy.—1st, H. Wood; 2nd, equal, A. Hamer and J. Bradley; h.c., T. Pritchard.

Complete Frame Hive (price not exceeding 15s.).—1st and 2nd, W. P. Meadows, Syston; c., G. H. Varty, Etwall.

Complete Frame Hive (price unlimited).—1st, W. P. Meadows; 2nd, Lanaway & Sons, Redhill.

Collection of Appliances.—1st, W. P. Meadows; 2nd, G. H. Varty.

Mead.—1st, J. Bradley.

Honey Vinegar.—1st and c., P. Scattergood, Stapleford.

Beeswax.—1st, E. Oakes; 2nd, W. H. Brown, Pontesbury.

Bee Flowers.—1st, J. Bradley; 2nd, G. Lloyd.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

AN APIARY IN SOUTH TYROL.

[3748] In consequence of my having become a widower I shall be induced to give up this lovely retreat in the South Tyrol, as well as my favourites, the bees, and if by any chance you should know of some one willing to take my apiary off my hands and to retire to this quiet corner in the hills, I will be glad of your help. This is a paradise where people live long. I have twenty-three stocks of bees in English hives on standard frames. Lana is about five miles from Mison, where there is an English church. I may say that persons may live here very comfortably at a small expense, and although I pay a very low rent, I have ample comfort and endless space at my disposal. I might also sell my furniture, or sub-let the whole as it stands, or even *part* of my rooms.

This later combination would allow me to spend a month now and then here—but it would require gentlefolk, as the rooms are suitably furnished for persons of refined habits.

In my bookcases are, perhaps, 300 or 400 volumes of English books.

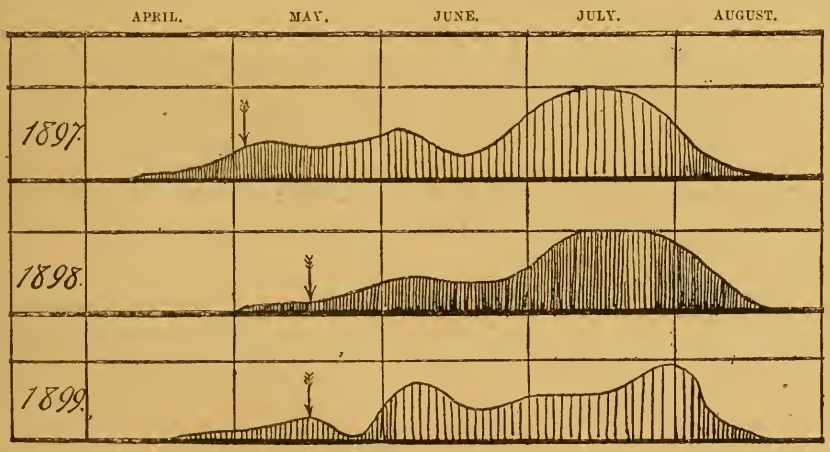
Hoping that this seed may fall on fertile ground.—I remain, &c., HANS FURNKRANZ, *Lana, a/d Etsch, South Tyrol, Austria, August* 6.

[The letter—which comes from an old subscriber to and reader of our journals, residing in the South Tyrol—may possibly be the means of discovering a reader disposed to think of accepting the chance offered. Its publication is the only means we have of assisting Mr. Furnkranz, and, although we do not as a rule print communications of a like nature, we make an exception in this case for the reason stated.—EDS.]

RECORDING THE HONEY FLOW.

[3749.] It is frequently stated in our bee-journals that it is impossible to say what bee-keepers should be doing, as so much depends on the district. I accordingly beg to submit my plan of determining and remembering what my district is. The rough sketch sent represents the last three seasons, of '97, '98, and '99.

Each season I plot a curve any ordinate of which represents, as nearly as I can calculate, the rate at which the bees are storing honey at the particular date corresponding to that ordinate. I afterwards shade the curve to indicate approximately the colour of the honey gathered; and place an arrow to indicate the time when the best hives were supered.



From these curves it can be seen at a glance that my district is rather a late one; that there is generally a lull in the middle of June, and that the best and greatest quantity is gathered towards the end of July. It is also evident that the fruit crop in the last two seasons has failed from some cause.

I do not let this curve supplant a notebook altogether; but it saves a considerable quantity of notes, a deal of time in looking up the notes taken in previous years, and shows at a glance what sort of a bee-year it has been, a result which no amount of written notes can do.

It would be very useful to those who are not in the habit of keeping notes at all.

I do not record single days, when the weather has perhaps altogether prevented the gathering of honey, as it would complicate the curve; nor do I consider it of any subsequent value to know of individual good or bad days. —L. H. H., *Watford, August* 15.

BEE PASTURAGE.

[3750.] A standard work on bee pasturage has not yet appeared, and compilers of bee books in general have only dealt with the subject in a cursory manner. It is, perhaps, not going too far to say that the combined labours of several well-qualified individuals might be essential to the construction of an exhaustive and reliable work. As most advanced bee-keepers know, climate has much to do with the secretion of nectar, and so it results that the honey value of any given plant may be found to vary considerably according to locality. From this it is obvious that research should be extended over a fairly wide geographical range.

In a volume such as that compiled by Mr. Henry Dobbie, the writer has probably to rely in great measure on data outside the range of his own observations, and in the result we find statements included which are not always borne out by practical experience. The willow, for instance, which is classed as a pollen bearer only, is, I find, also one of the best early honey producers. This remark applies in particular to the female plant, the catkins of which do not yield pollen, but which, at any rate in this part of the country, literally teem with bees in the early spring. It is, in fact, about the first plant of the year on which the

bee-keeper may see his little charges seriously at work in great numbers. Another unnamed source is the common laurel, which yields a fair supply from glands situated at the base of the leaves. The dandelion, again, I find to be one of the best pollen bearers, and the daisy one of the most inferior; yet they are classed as equal in this respect. The box also, though unnamed, deserves a high place among pollen bearers. Lastly, I should like to instance sainfoin, which I believe most bee-keepers in those localities where it flourishes will agree with me in placing at the very head of honey-producing plants in England. It is beyond question vastly superior to Lucerne, which nevertheless occupies a higher place in Mr. Dobbie's list. To sit watching a field of sainfoin on a bright June day is one of those privileges which fills the heart of the enthusiastic bee-keeper with that subdued rapture such as he only can experience. Having already encroached too far on your valuable space I will close with an expression of the hope that some of your readers who have dipped into this part of the bee question may be induced to give their experiences.—A. Royds, Junr., *Botley, Hants.*

FOUL BROOD AND FOUNDATION.

[3751.] For some time past I have had the impression that foul brood was being sown broadcast in brood-foundation, and my views are a good deal strengthened after reading the able letters that have appeared for some months past in *Gleanings* (American) on boiling honey from hives affected with foul brood. It seems to me there is no longer any doubt about the matter after Mr. Root's article in *Gleanings* for May 15 (page 401), and you would be doing good service to bee-keepers in general by your publishing the article referred to, asking bee-keepers not to send their foul-brood wax to be made up into foundation.—J. Pearman, *Derby.*

[The editorial reference mentioned reads as follows.—Eds.]

"WAX FROM DISEASED COMBS NOT SAFE.

"One of our patrons recently sent us a lot of wax that he had rendered out from foul broody combs, and he was honest enough to tell us of the fact at the time of making the shipment. As soon as I knew of it I told our freight-man to be on the look-out for it, and the foreman of the wax-room to be prepared to give it special treatment. While I believe there would not be much danger, I feel sure it is wise to err on the safe side. We have, accordingly, taken this wax and brought it to the boiling-point, or as nearly so as we could, in a barrel by itself, using a jet of steam. After it was boiled for an hour or so, and was allowed to stand, the next day it was treated as before, and still again it was heated, after which it will be mingled with the general supply, and then heated once more. This, of course, will render it entirely safe. The recent discussion regarding the power of the spores of foul brood to resist prolonged extremes of heat goes to show that even three hours of continuous boiling might not kill them.

"I cannot help thinking that it is very unwise, certainly unsafe, for any one to render up old foul-broody combs. Wax with a steam-jet cannot be heated much beyond 200 deg. Fahr., and never more than 212 deg. if surrounded by a vat of boiling water; and even if one can thoroughly sterilise his wax, he runs a tremendous risk while he is going through the process of sterlisation.

"We desire to say to our friends and patrons that we prefer not to receive wax from foul broody combs; and if any one has ever sent us wax from such combs, without telling us what this wax was rendered from in the first place, there would be a *possible* danger of giving some innocent user of foundation foul brood. I do not mean to raise any scare, but I do not think we can be any too careful when dealing with this insidious enemy."—*Gleanings* (American).

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Mr. Lyon, whose bee-house apiary is shown on next page, is a reader who may be fitly described as a "worker" among bee-men. Where voluntary and unselfish work is needed in aid of the bee-industry our friend is foremost in doing it. Beyond saying that the fine Alexandra Park at Hastings, of which he had been superintendent for many years, is greatly indebted to Mr. Lyon's skill in laying out and beautifying it, we add nothing to the "notes" printed below except to say that they are both interesting and useful to bee-keepers. He says:—

"You ask for a few of my experiences, &c., in bee-keeping. But I hardly know what to write thereon, having had no element of excitement in it during the ten years I have kept bees. I may, however, say that my knowledge of bees prior to that time was very slight; I can remember, as a boy, being sent by the farmer, for whom I then worked in the north of Scotland, to chase runaway swarms, and very hot work I thought it, with very little to show for your labour. And my opinion on that point remains the same to-day. When a swarm flies off, instead of starting to run after it you may just as well sit down calmly and watch the bees depart, and smoke your pipe if you feel so inclined, for once started in the chase, although you may think that you are keeping even with them or it may be even gaining ground, in the long run you are sure to be hopelessly beaten.

"Well, as I said before, Sir, I started about ten years ago, with one bar-frame hive, and by eagerly devouring all the bee literature I could lay hands on, and regularly reading my B.B.J., I have managed, so far, to get along without

any serious mishap or mistake. But I am quite convinced that the immediate neighbourhood of Hastings is not an ideal locality for bee-keeping. We have no sainfoin, very little white clover, and no orchards. So that we rarely get what you would call an average crop of honey. Last year it was very short, and with so many trees about you may guess what the honey was like, without my sending you a sample.

"Some years ago I paid a visit to a bee-keeper who used to contribute regularly to your columns (Mr. Kirsten, at Southborough), and after seeing his bee-houses, nothing would satisfy me but the possession of a bee-house too, so I set to work and constructed one capable of holding twelve hives. It is built of 1-in. floor-boarding, roofed with corrugated-iron; the latter being thatched, which I find maintains a fairly equable temperature.

"Of its appearance the photo sent gives a fair idea, and I have had no reason to regret the change, for I find it is much easier to handle the bees inside a house. It also enables one to do many things in wet weather about the hives that could not be easily done outside. Among other things, I found some difficulty in feeding in spring (when putting a feeder on the top) to keep the quilts nicely tucked down. I, therefore, adopted the following plan, which answers admirably and costs nothing:—The floor-boards are of $1\frac{1}{4}$ in. stuff; I cut out at the back a section the exact size and depth of a sardine tin, and fit it with a wooden slide. Now, when I want to do slow feeding in spring, I simply draw out my slide and slip in a shallow feeder (my sardine tin) with a wooden float; I can then go in the evening and give all the stocks some food without any disturbance. In fact, the quilts on the top are never disturbed; consequently, when bees are being fed there is no loss of heat.

"The bee-house seen lies in a well-sheltered corner of a small vegetable and fruit garden, and faces due south-east, so that in the morning the sun shining in at the door brings the little workers out early to the labours of the day. Mine is a very small apiary, hardly worth a place in your bee-garden pictures, and is kept more as a hobby than as a business concern; nor does it ever exceed eight or ten hives. For the rest, I think I may say it is just about self-supporting. But as no exact account is kept, I cannot be sure.

"Besides looking after my own little apiary, I am pleased to say that I have often been able to give a helping hand to beginners in the neighbourhood, or any one in difficulty with their bees, and have often been credited with a greater knowledge of bee-keeping and their ways than I actually possess."

MR. G. C. LYON'S APIARY, ALEXANDRA PARK, HASTINGS.

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING AUGUST 26, 1899.

1899.	Bar. in.	Tem. 9am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Aug. 20....	30·23	64·5	73	58	15	65·1	—
„ 21....	30·32	61·0	78	49	29	62·6	—
„ 22....	30·32	65·0	80	44	36	60·9	—
„ 23....	30·30	59·0	82	50	32	65·0	—
„ 24....	30·20	70·0	84	55	29	68·6	—
„ 25....	30·09	73·3	89	52	37	69·4	—
„ 26 ...	30·13	69·8	82	53	29	66·6	—
Means	30·23	66·1	81·1	51·6	29·6	65·5	Nil.

Mean vapour tension, 0·432 in.; mean relative humidity, 68 per cent.; mean temp. of the dew point, 54°·8. For the week ending August 19, the mean temp., viz., 63°·2, was +2°·6, and the rainfall, viz., ·63 in., +·11 in. The mean temp., July 30 to August 19, viz., 63°·7, is +2°·6, and the rainfall, viz., ·67 in., −1·10 in. The rainfall, January 1 to August 19, viz., 11·71 in., is −3·37 in.

RAINFALL STATISTICS.

1899.	No. of Days.	Rainfall.	Average.	Difference.	No. of Rainy Days.
		In.	In.	In.	
Feb. 26—April 1 ...	35	·75	1·66	− ·91	10
May 28—July 1	35	1·58	2·32	− ·74	8
July 2—August 12 ..	42	·67	3·62	− 2·95	12
May 28—August 12..	77	2·25	5·94	− 3·69	20
July 30—August 12	14	·04	1·25	− 1·21	3
April 2—August 12..	133	6·13	9·45	− 3·32	51
Jan. 1—August 12 ..	224	11·08	14·56	− 3·48	100

The rainfall on July 1 was ·41 in.
Absolute drought, Feb. 22—March 7 = 14 days.
Do. Do. May 25—June 17 = 24 days.

HEAT WAVE.

August 23-27, 1899.

1899.	Temp. 9 a.m. deg.	Max. deg.	Min. deg.	Range. deg.	Mean. deg.
August 23	59·0	82	50	32	65·0
„ 24	70·0	84	55	29	68·6
„ 25	73·3	89	52	37	69·3
„ 26	69·8	82	53	29	66·6
„ 27	66·5	80	54	26	66·2
Means	67·7	83·4	52·8	30·6	67·2

The mean temp., August 22-26 = 66°·1.

FRED. COVENTRY.

Duddington, Stamford, August 28.

Echoes from the Hives.

Yorks, East Riding, August 21.—The season here has been a good one, although the excessive drought cut short the white clover, a field of which I saw in blossom only a week since and bees working on it. After weeks of drought I doubt, however, if there would be much nectar in the clover bloom. It is to be feared that foul brood is very prevalent in the Holderness district; last year a correspondent reported it as raging round Beverley, it was in my village last year and has, of course, again reappeared, and your journal reported it at a village called Preston near Hull. The stock I had affected is now quite healthy, full of healthy brood and ample stores for the winter. —ALPHA.

Banffshire, N.B., August 24.—The hives are teeming with bees, and my honey harvest promises to be my best. Several have three and four racks of sections all but finished, and one has already given me *six racks* with *four on!* North here the season is a good one, and I must shortly give you a par on the subject. We hope to have three weeks yet on the heather.—D. M. M.

Queries and Replies.

[2261.] *Transferring from Skep to Frame-Hive.* — About June 7, a stray swarm of Carniolan bees made a home in a skep full of old comb without any honey, which I had in my garden. They have been working well in it ever since. I had gone in for bees when living in St. Helier's (town) and my frame-hive (large size) was being painted, &c., when the swarm came to me; otherwise I would have thrown them into it at once. 1. Kindly advise what is best to do? Shall I leave bees in skep all the winter or transfer them to hive by placing skep on the top at once? 2. I have a friend who has a quantity of skeps full of honey; he wishes to give up skeps and only keep frame-hives; is it advisable to chloroform them and then shake several skep swarms in one hive? I am now living in the country surrounded by trees, fields, and sea, and wish to proceed systematically with my bee-keeping. I love them much. Mr. Bois, Bee-farm, Trinity, was my first instructor. Is it possible to belong to the Bee Association though away? We have no such thing in Jersey.—L. A. GODFREY, *St. Ouen, Jersey, August* 21.

REPLY.—1. By all means let the bees be wintered in the skep. They will be far better and safer if left so. The proper time for putting them above top bars of frame-hive is in the early spring of next year. 2. If your friend chose to prepare several frame-hives with full sheets of foundation, besides being willing to feed the bees liberally during this month, and would unite the bees of two or three skeps—after driving—into each frame-hive, he might, no doubt, carry them safely over the winter; but to an inexperienced hand we hardly advise undertaking so serious a task in bee operations that might so easily end disastrously. Let him transfer as we have advised you to do and no risk will follow.

[2262.] *Transferring Combs and Bees—Feeding up for Winter.*—In April last I

started with a stock of bees in bar-frame hive, which was afterwards found to be in dirty condition. In June I put on a rack of sections, but owing to bad season, I suppose, the bees have not even yet drawn out the comb in sections, although present in them in goodly numbers. The last week of July drones began to be ejected, but with the bright warm weather the workers seem to have given them a further lease of life until now. The stock is strong and healthy, but I am in doubt as to —1. Whether the sections had better be taken away, and when? 2. When I had better transfer to new hive? 3. When to feed the bees? I ought to say the bees are gathering plenty of pollen and are working in right good earnest.—F. E. R., *Walthamstow.*

Reply.—1. Sections should be at once taken off. 2. If frames are standard size, and fit the new hive, the sooner they are transferred the better. 3. First ascertain what food is required to make up about 30 lb. of stores for wintering on. This done, feed slowly for a fortnight; then give balance as rapidly as the bees will take the syrup down.

[2263.] *Completing Unsealed Combs in September.*—I have a swarm of bees in a box with fixed bars. I put on a box of shallow-frames (above queen-excluder) which the bees have drawn out and partly filled but not sealed. Could I feed them with thin honey so as to get them sealed to be saleable as comb-honey?—A Subscriber, *Belfast.*

Reply.—The chances of getting bees to fill and seal over combs of surplus-chambers in September—even with feeding, as proposed—are about *nil.* In fact, the tendency of bees is to carry food down into, instead of storing it above, brood-nests at this late season of the year.

[2264.] *Insect Nomenclature.* — Can you inform me what is the name of the enclosed insect? I am anxious to know on account of the very persistent way in which it attacked one of my hives. I saw it dragged out by the bees three times, and after each time, as soon as it got free, it flew up and again entered the hive, apparently passing the sentinels at the door as if it were an ordinary inhabitant, being ejected by the bees inside after about thirty seconds. I caught it after the third time, and gave it a dose of ammonia to kill it. Do these creatures often enter hives, and what would be its probable motive?—T. W. S, *Surbiton, August* 23.

Reply —The insect sent is a male or drone of *Psithyrus rupestris,* a bee that is closely related to, and also parasitic upon, the humble-bee, *Bombus lapidarius.* This male would naturally spend its life in feeding on the honey it can extract from various kinds of flowers, and in coursing about over the surface of grassy slopes in search for a mate of its own species. For it to attempt to enter the hive in the way explained is quite unusual. Its plucked and shiny appearance makes it look like an old robber, and fully confirms your observations. The female of this species is provided with a specially hard integument which renders it practically proof against the stings of the humble-bee, on which it is parasitic. The integument of the male is also rather tougher than that of most bees. Armed with this protective coat of mail, this bee probably took no more notice of the inhabitants of the hive than if they were a swarm of harmless flies, and most likely its only motive in trying to force a passage into the hive was to get a sip of honey, the presence of which may have been indicated by the sweet smell which issues from the entrance of old-established stocks at this time of year. The *Psithyrus* male could not have retaliated on the workers because it is stingless, and it could not have brought any of its companions, because when they once fly from the nest they do not usually return again to it.—(F. W. L. Sladen.)

[2265.] *Using the Super-Clearer.*—I am sending for your inspection a number of dead bees and broken-up comb, and shall be obliged if you will give me your opinion as to the cause of the same? On the 19th inst. I placed the bee-escape under the section-rack of one of our hives, about a dozen of the sections being sealed. Next morning we noticed that the bees were much excited, great numbers of them flying about round the hive. On the 21st I removed the section-rack and found that every drop of honey had been cleared out, and the combs partly destroyed, as in the example sent.

There was a good handful of dead bees, with broken-up comb, upon the wooden part of the escape, and the escape itself was choked up with dead bees and comb.

On the ground in front of the hive were also several handfuls of dead bees. I have looked into the body of the hive, which is full of bees apparently healthy (though rather bad-tempered!), and with plenty of comb and honey. I could see no signs of wax-moth.

Do you think it could have been a case of robbing? If so, how could the enemy bees have gained access to the sections?—M. W., *Stanford-le-Hope, August* 25.

Reply.—It is a clear case of "robbing," and we are forced to the conclusion that by some "misfit" in putting on the clearer, there has been access to the sections from the outside, as the honey has evidently been carried off by alien bees entering from above. It is necessary to be very careful not to give outside access to surplus-chambers when using the super-clearer.

[2266.] *Utilising Condemned Bees* —I had a skep of bees which are now in frame-hive. After the bees were driven I put the skep on top of frames (with a piece excluder zinc between) for brood to hatch out. This has now been done, but the bees have not enough stores for winter in the nine frames the hive contains. I therefore ask—1. Would it be best

to leave them as they are without reducing the number of frames for the winter? If not, please tell me best thing to do? 2. I should also like to know treatment of a driven stock of condemned bees which have been promised me for the driving of them if I can do it. I should like to put them in a frame-hive. How many sheets of foundation should I give them? And what is the best course for me to take when driving the bees? I mean, what must I do to get them from skep into hive? 3. Should I feed the bees at once after driving? 4. What quantity of food is needed after driving and how often should the bees be fed during the winter?—A BEGINNER, *Penn, Amersham, August* 22.

REPLY.—1. If the bees don't cover the nine frames, remove those that are bee-less for replacing in spring. 2, 3, and 4. The best reply we can offer to these queries is to invest in a "Guide Book" on b e keeping, where the several operations enumerated are fully described and illustrated. No beginner can hope to succeed with modern methods without the help of some such book as we have mentioned.

[2267.] *Preventing Swarming.*—Being an amateur at bee-keeping I will be obliged for replies to the following queries. 1. When a top swarm comes off in spite of one's efforts at prevention, what is the next best thing to do? I tried "giving room in advance," but to no purpose. Should I have cut out all the queen cells and returned the swarm? Through swarming, the stock has done nothing in the way of honey gathering. Of course, the inevitable second swarm came off as well. 2. Are there any means of stopping bees from using so much propolis? My bees seem highly gifted in this way. 3. Which queen survives when a swarm joins itself to a stock? The stock hive, I should say, killed all the bees belonging to the swarm. 4 I am told, if I used much larger frames than the "standard" it would prevent, or at least check, swarming to a great extent; do you think this is so? I am a subscriber to the B B.J. and greatly appreciate it.—"CLOVER," *Newtown, Carlisle, August* 28.

REPLY.—1. In your case the "next best thing" would have been to hive the swarm on about six frames (fitted with comb foundation) and place it on the old stand. Then, after setting on a queen excluder, give the surplus chambers from the parent colony to the swarm and remove the old hive to a new stand. 2. Nothing beyond keeping the hive as free from places where the cold air can enter from the outside. If a district yields propolis abundantly, the bees will gather it for stopping up cracks, &c. 3. Most likely the one at the head of the hive entered by the swarm. 4. It is sheer nonsense to talk about large frames preventing swarming. It is "management" that secures this end, if desired, and experienced bee-keepers seldom need more than the "timely room in advance, with shade and ventilation," in order to attain the end striven for. Beyond this we can only say that some of the many non-swarming hives, that have been devised for the purpose, are at times effective, if properly and intelligently used.

BEES IN A CHURCH CLOCK.

Many complaints have been made of late regarding the church clock at Harborne. The clock has been quite spasmodic in its movements, and has caused much annoyance to those who depend upon it for the time of day. A Mr. Leeson, of Coleshill, a nephew of the maker, has been in frequent requisition to keep the delinquent going. He made many visits, and applied those remedies known to the craft of clockmaking without any permanent good effect. The clockmaker was certainly successful in getting the clock to go during his stay in the turret, but he had hardly left the neighbourhood upon each occasion when another stoppage occurred. After making several journeys to Harborne without being in any way successful, he determined upon making a thorough investigation. A day or two ago he went into the turret, and, upon looking into the works connected with the south dial he found a swarm of bees buzzing about, and a huge deposit of honey attached to the dial and some of the working parts. Having procured some gunpowder he fired it and silenced the bees, and then commenced to get away the honey. This was no easy task, and occupied the clockmaker for more than two days, upwards of ½ cwt. of honey being removed. The Harborne clock, we believe, is now working satisfactorily.—

Bee Shows to Come.

September 6 and 7 at Birkenhead.—Cheshire B.K.A. Show, in connection with the Wirral and Birkenhead Agricultural Society. Eight classes.

September 7, in the Town Hall, Castle Douglas.—Annual Show of the Galloway Horticultural and Honey Society. Open classes, with liberal prizes for three 1-lb. jars, and for three 1-lb. Sections. Schedules from Mr. Thos. Myers, Castle Douglas, N.B. **Entries close September 2.**

September 13 and 14 at Derby.—Eighteenth annual show of the D.B.K.A., in connection with that of the Derbyshire Agricultural Society.

September 13 and 14, at Edinburgh.—Midlothian B.K A, Annual Honey Show in connection with the Caledonian Horticultural Society's Exhibition in the Waverley Market. Seventeen open classes. Schedules from Wm. Weir, Heriot, Midlothian. **Entries close September 6.**

September 30 to October 7 at the Agricultural Hall, London.—Honey Show in connection with the fourth Annual Exhibition of the Grocery and Kindred Trades. Classes (open to master grocers only) for comb-honey in sections and for extracted honey. (See advertisement on page v.) **Entries close September 16.**

October 17 to 20 at the Agricultural Hall, London.—Show of Honey and Bee-produce in connection with the British Dairy Farmers' Association. Numerous and liberal prizes for honey, &c.—Schedules from Mr. E. Young, Secretary, 12, Hanover-square, London, W. (See advertisement on page ii.) **Entries close September 20.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

SPEARMAN (Andoversford).—*Buying Section-Glasses.*—If you will mention the date or page when advertisement referred to appeared, we will look the matter up and see to your complaint.

W. X.—*Dealing with Foul Brood.*—1. The correspondent referred to got the bees off diseased combs and into a clean hive, using disinfectants in the process; but this can only be done successfully in the summer, when bees will build out new comb readily, and, moreover, have the summer before them for breeding up into a good stock. It is far less easy to cure at this season. 2. The Hon. Sec. of the Staffs B.K.A. is Mr. Ellis E. Crisp, 8, Jesson-street, Coventry.

H. C. (Minsterworth). — *Suspected Comb.*— There is nothing worse in comb than freshly-gathered pollen. We advise removal of all surplus-chambers and examination of the brood nest, it being very unusual to see pollen so freely stored in combs of surplus-chambers that have never been bred in. The combs in brood nest may be "pollen-choked," and so have become useless for breeding.

M. BROWN (Dublin).—*Varieties of Bees.*—Six of the eight bees received are the common or native bee of this country, the remaining two being hybrid Ligurian (or Italians). In writing, please address BEE JOURNAL office, 17, King William-street, W.C., not to our printers in Great Queen-street.

H. C. (Isleworth). — *Examining Hives and Removing Surplus-Honey.* — For full instructions on these points you should read the chapter on "Subduing and Handling Bees" in "Guide Book" where six pages are so occupied. We can in this column only give a brief line to say after a puff or two from smoker give the bees a couple of minutes to "gorge" and then proceed quietly to remove quilts, using only so much smoke as will keep the bees down and out of your way while manipulating.

X. A. (Yorks). — *Sending Live Bees for Examination.* — The bees sent are hybrid Ligurians. Our correspondent has apparently not yet learned to value the lives of his bees as we hope he will ere long. It is, to our mind, one of the "points" which go to make a good bee-keeper never to sacrifice a bee needlessly, and, having made this our rule for thirty years past, we must be forgiven for saying that we did not take at all kindly to the task of killing some two score of bees in the box sent. Two bees (dead ones preferred) are all we need in determining their race or variety.

W. C. T. (Tewkesbury).—*Honey Samples.* 1. Sample marked No. 1 is inferior in colour and flavour, with bad aroma. No. 2, fair in colour and flavour—the distinctive flavour being, we should say, from limes — but neither sample is good enough for exhibition 2. The screw-cap jar is most suitable for showing in. 3. Yes, 75 lb. and 56 lb. respectively is not a bad "take" from two stocks.

"SECTIONS." (Birmingham). — *Propolising Section-racks.* — Extensive propolisation usually begins when the bees are preparing to close up all "chinks" that admit cold air, preparatory to going into winter quarters. The best preventive is warm coverings closely pressed down to keep out cold. 2. Syrup correctly made from recipe in "Guide Book" will not "candy at bottom of jar by next morning." We have had it keep good for months made from same recipe.

F. HAMSHAR (Sussex).—*Suspected Comb.*— There is no foul brood in comb sent, but the stock is evidently headed by an unmated queen, as worker cells are all occupied with drone brood. The stock is, in consequence, worthless.

W. WELCH. — *Adding Nucleus Colony to Queenless Stock.* — On no account risk uniting without first caging the queen of nucleus for twenty-four hours.

H. P. (Kingsbridge).—*Suspected Comb.—Unrefined Cane Sugar for Bee-food.*—1. The few dead drone-larvæ bear the appearance of having been "chilled," but we will have a careful microscopic examination made, and report later on. The sample of worker brood must have missed in post. 2. Raw or unrefined cane sugar is not suitable for bee food in autumn. At this season only refined crystals should be used.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

FOR SALE, ½ cwt. splendid HONEY. What offers, TURNER, Gas Works, Holsworthy. 424

23RD YEAR.—RE-QUEEN NOW also Strengthen Stocks (see my advertisement). ALSFORD, Expert, Blandford. 422

80 SECTIONS (well-filled) CLOVER HONEY. What offers? STUART, Colonnade, Tenterden, Kent. 423

HONEY.—FOR SALE, large quantity of splendid EXTRACTED HONEY, sample 2d., also good 1-lb. SECTIONS. GEO. CROMBIE, Hotham, East Yorks. 431

2-OZ. Glass Tie-over HONEY JARS, best quality, 2s. 9d. half a gross; 5s. gross. RUDD, Grimston, Norfolk. 420

BEES FOR SALE, 3 bar-framed hives, 6 skeps full of honey; the lot £6. Apply, FAIREY, Manor Farm, Harrold, Beds. 419

SPLENDID HONEY, £3 cwt. Purchaser to send tins. Sample free. Address, Burton-Leonard Vicarage, Leeds. 418

HONEY LABELS, new design, including name and address, 1,000, 7s. 6d.; 500, 4s. 6d. GUEST, King's Norton. 417

FOR SALE—What offers? Good well-filled SECTIONS, 1899. From one dozen to 5,000. Well packed and guarantee safe arrival. H. SEAMARK, Willingham, Cambs. 421

Prepaid Advertisements (*Continued*).

GUARANTEED HEALTHY DRIVEN BEES, with Fertile Queen, 1s. 3d. lb. QUEENS, 2s. each. Strong healthy STOCKS in Skeps about 30 lb. each, 12s. 6d. WOODS, Normandy, Guildford. 426

CASH OFFERS WANTED for Heather Sections; also Shallow Frames on drone foundation, free from pollen; also Pressed Heather Honey in bulk and 1-lb bottles. J. H. HORN, Bedale, Yorks. 429

NEW HONEY.—WANTED, 1-lb. SECTIONS, clean, not dark, well-filled, and sealed. Any quantity. State lowest price for cash. M. CHARLTON, 42, Fawcett-street, Sunderland. 415

COMFORTABLE APARTMENTS for Brother Bee-keepers visiting Douglas. HORSLEY, Merridale House, Empire-terrace, Top of Castle Drive, Isle of Man. 432

GOOD HEALTHY QUEENS; only 1s. 6d. each; 10 for 12s. 6d. Replaced if not satisfactory. Also some good guaranteed 1899 QUEENS, 2s. each. Approval with safe arrival, &c. A few cwt. Honey to clear at 5d. lb., packed. SPEARMAN, Colesbourne, Andoversford. 416

SIX strong STOCKS BEES FOR SALE, on nine frames with natural stores; 3½ cwt. surplus Honey from same this year, packed and put on rail, £5 10s., or £1 each separately. BUCKBY, Station-road, Burton Latimer, Kettering. 430

STRONG three-frame Nuclei 1899, tested QUEENS, 10s. 6d. each. Guaranteed healthy. Packages to be returned. Fine tested 1899 Queens, 3s. 6d. each. Safe arrival guaranteed. WHITING, Valley Apiaries, Hundon, Clare, Suffolk. 427

I CAN spare a few strong STOCKS of BEES from my apiary, 15s. each, or in Lee's "Holborn" Hive, 30s. each. Standard frames. Guaranteed healthy and free from foul brood. Packing cases free not returnable. EDWARD ROBB, The Apiary, Outwell, Wisbech. 425

23RD YEAR.—SWARMS, with Queens, 5s. 6d. cases free; QUEENS, 3s. 9d. delivered; Three-frame NUCLEI, Bees, Brood, and Queen, 12s. 6d. cases free. All the above queens selected '99. ALSFORD, Expert, Blandford. 423

WANTED, Light PORTER having knowledge of bee-keeping. ANTHONY & Co., Chemists, Cardiff. 400

EXTRACTED HONEY, 5d. and 6d. Samples 3d. each. SALMON, Bee Expert, Haresfield, Gloucestershire. 402

1,000 lb. good light HONEY, 6d. lb.; sample 3d. Apply, JOHNSON & SON, Soham, Cambs. 410

HEALTHY DRIVEN BEES in 4 or 5 lb. lots, 1s. 3d. lb. Boxes to be returned. E. LONG, Fulbourne, Cambs. 386

PROLIFIC QUEENS, Nuclei, Stocks (Skeps and Frame Hives), and Swarms. E. WOODHAM, Clavering, Newport, Essex. 363

ENGLISH MADE HONEY JARS (1-lb. screw-cap), 14s. per gross; sample, 6d. JAS. DYSON, Stainforth, Doncaster. F.N.

"W.B.C." HIVES.—Make your own at third the cost. For particulars, send stamped addressed envelope. PRIDEAUX, Whitchurch, Salop. 302

QUEENS, STOCKS, NUCLEI, and SWARMS. A few more orders can be accepted. List free. Rev. C. BRERETON, Pulborough, Sussex.

FINE tested ENGLISH QUEENS, bred from my selected strain, in introducing cage, post free, 5s. each. Ready now. W. WOODLEY, Beedon, Newbury.

HEALTHY DRIVEN BEES at 1s. 3d. per lb., not less than 4-lb. lots with queen. Boxes returnable; also young Fertile Queens at 1s. 6d.; post free; ninth season. R. BROWN, Flora Apiary, Somersham, Hunts. 380

BRICE'S RELIABLE QUEENS. Well-known strain, one quality, one price. Mated tested Queen, 5s. 6d., post free in perfected travelling and introducing cage. Safe arrival guaranteed. HENRY W. BRICE, 100, Brigstock-road, Thornton Heath.

CHOICE Young BLACK QUEENS. Natural raised, tested, and safe arrival guaranteed, 2s. 6d. each, post free. Also a few lots of Driven Bees at 1s. 3d. per lb., in 4 or 5 lb. lots, with Queen. Boxes to be returned, carriage paid. A. J. CARTER, Newfields, Billingshurst, Sussex.

Prepaid Advertisements (*Continued*)

FURTHER REDUCTIONS. TRANSPARENT CELLULOID QUILTS, post free, 1s. 6d.; CELLULOID QUEEN EXCLUDERS, post free, 1s. 6d. R. H. COLTMAN, Bee-Appliance Maker, Burton-on-Trent.

LACE PAPER for SECTION GLAZING (something new), in white, pale green, and pink; 1 in. wide. 100 strips, 7d.; 200, 1s. 2d.; 300, 1s. 6d.; 500, 2s. 3d.; 1,000, 4s. Also LACE BANDS (lace edge both sides), 2⅞ and 3⅛ in. wide. White: 100, 1s. 3d.; 200, 2s. 3d.; 300, 3s.; 500, 4s. 9d. Pink and Pale Green: 100, 1s. 6d.; 200, 2s. 9d.; 300, 4s.; 500, 5s. 6d. (Samples of each kind and colour, 3d.) All post free. W. WOODLEY, Beedon, Newbury.

SCREW-CAP HONEY BOTTLES

(ENGLISH MAKE).

16 oz. in bags of 10 doz., **12/9**; 7 oz. in bags of 6 doz., **7/-**. Packing free.

Sections, Weed Foundations, Hives, &c.

GARNETT BROS., 29, High St., ROTHERHAM.

SELF-CLOSING HONEY TINS.

1 lb., 13s. gross, 1s. 3d. doz.; 2 lb. 21s. gross, 2s. doz. 4 lb., 31s. gross, 3s. doz.; 7 lb., 46s. gross, 4s. 6d. doz.

HUNT & HUNTLEY,
2, Bridge Street, Worcester.

LANCASHIRE BEE-KEEPERS' ASSOCIATION.

MEETINGS at Miss WILSON'S APIARY, MARSHALL HOUSE, TORRISHOLME, near MORECAMBE, SATURDAY, SEPTEMBER 9th, at 4 p.m.

Members invited to bring a Jar of Honey and a Section. Prizes will be awarded for the best.

SLADEN'S "ROYAL MAIDSTONE" PRIZE HIVE

(on the "W.B.C." plan; no plinths), as exhibited at the "Royal" Show, with two lifts and supers, 17s. 6d.

SPECIAL STRONG FRAMES,

with hardwood top-bars, extra thick between the uprights; top-bar cannot break with weight of honey, 1s. 6d. per dozen; 50 for 5s. 6d.

SLADEN'S HARDY and PROLIFIC ITALIAN BEES, also PLANTS and SEEDS for BEES.

Particulars on application.

Besides the above special articles, all BEE-KEEPERS REQUISITES are kept and Supplied Promptly at moderate prices. Orders of £5 in value carriage paid to any Station in England, £2 carriage paid to London.

GOOD ENGLISH HONEY WANTED.

F. SLADEN, Ripple Court Apiary, nr. Dover.

PURE ITALIAN BEES.

SILVIO GALLETTI, APICULTURIST,

TENERO (Italian Switzerland).

Date.	Fertile Queen. s. d.		1 lb. Swarm. s. d.	2 lb. Swarm. s. d.	3 lb. Swarm. s. d.
June	5 6	.....	11 0	14 6	17 0
July	5 0	.....	8 6	12 0	17 0
Aug.	4 6	.....	7 6	10 6	14 6
Sept.	4 0	.....	7 0	9 4	12 0
Oct.	3 6	.....	6 0	8 6	10 0

If a Queen dies in transit, and is returned at once, it will be replaced free of charge. Queens sent safely by letter, *post free*. For Swarms, cost of carriage charged to the receiver. *Pureness of breed and safe transport guaranteed.* Liberal discount on large orders. All orders executed promptly and conscientiously.

Payment by Money Order.

Editorial, Notices, &c.

THE "GROCERIES" EXHIBITION.

CREATING A HONEY MARKET.

In our issue of September 1 last year we endeavoured to enlist the favourable attention of B.J. readers with regard to a new departure then made by the managing directors of the Grocery and Allied Trades Exhibition, held at the Royal Agricultural Hall, London, in October, 1898. It was there announced that valuable money prizes, together with diplomas, would be competed for by master grocers, in classes for comb-honey in sections, and extracted honey in glass jars. The British Bee-keepers' Association also added to the prize list by presenting their Silver and Bronze Medals and the Certificate of Merit of the Association for the best exhibits in the respective classes.

The competition referred to above was undoubtedly successful as an initial effort; but the untoward honey season of 1898 weighed heavily against it, while the display, as a display, was considerably marred owing to the fact of the exhibits having to be shown in large glazed counter-cases instead of on the usual platform staging generally adopted on these occasions. Of course, these drawbacks were felt at the time as being disadvantageous, and we are glad to learn that better arrangements have been made for this year's show, when prizes are again offered for honey, as per advertisement in this issue.

Among other things, the services of Mr. W. Herrod (apiarist of the B.B.K.A.) have been secured for the honey department, and the exhibits will, therefore, not only be staged by him, but packed under his superintendence for safe return to exhibitors after the show closes. The advantage of the latter arrangement will, no doubt, be appreciated by many who competed last year.

It was hoped that the honey section at this year's exhibition would have been somewhat extended, so far as its general scope, and that a few additional classes would have been arranged for in which bee-keepers might compete among themselves, apart from the classes for master grocers only. Nor is there any reason for supposing that the directors of the exhibition are in the least degree averse to an advance in this direction. On the contrary, it is more than probable that they will cordially welcome any effort which would not only add to the attractiveness of their annual exhibition, bu tend to secure co-operation between producers and distributors of bee-produce —*i.e.*, bee-keepers and grocers.

The phenomenal rapidity, however, with which the Groceries Exhibition has developed during the three years it has been established, and the enormous proportions it now assumes, render it imperative that arrangements involving changes of this kind be made a long time beforehand.

It would therefore have been necessary to take steps quite at the beginning of the year, with the view of securing such an enlargement of the schedule as might seem desirable in the interest of the bee-industry. But if bee-keepers would take time by the forelock, and make their wishes known through the proper channel, we believe that they will be liberally met in the direction desired.

Our business, however, is with the present, and bearing in mind the excellent material at hand this year, in the shape of high-class honey, held by a large number of BEE JOURNAL readers, it behoves the latter to do something towards creating a honey market by working in co-operation with master grocers under the favourable arrangement to which attention is here invited. We may therefore not inaptly conclude this appeal by repeating the closing lines of our article on the "Groceries" prior to last year's exhibition, wherein we said:—

"It only remains for us to offer a word of advice to bee-keepers by way of urging them to take the matter up promptly, and bring the subject properly before the notice of suitable tradesmen who are master grocers. Those of our readers who have good honey to dispose of should take this number of the BEE JOURNAL in their hands along with a sample of their best produce to the most suitable tradesman, and fully explain what the schedule means, viz., that the grocer buys the best honey he can and—after duly making an entry—exhibits it with the object of winning one of the valuable prizes offered, the only proviso

being that it is the product of 1899 and genuine British honey. The bee-keeper does not appear at all; but should the grocer secure a prize, why, that bee-man secures a customer for so long as he continues to serve the tradesman well.

'We are assured by the Managing Director of the coming exhibition that grocers in many parts of the country have already expressed the heartiest approval of the new idea, and willingness to cordially assist in working it out to a successful issue. It therefore remains for our own people to do the rest, and we are much mistaken if they do not show their good sense by losing no time in doing it."

THE "BATH BEE CASE."

Referring to the letter of Mrs. Pavy which appears on page 339 last week the following donations have so far been received or promised :—

	£	s.	d.
British Bee Journal	1	1	0
Wykham Blackwell	1	1	0
Arthur Webber (Chippenham) ...		5	0
T. S. Hoole (Surrey)...		2	0
Geo. Hayes (Beeston)		2	0
Jno. Berry (Llanrwst)		2	0
"Scottie"		1	6
W. W. Pryor (Welwyn, Herts) ...		1	0
G. W. Smith (Rodbourne)		1	0
G. Trice (Guildford)...		1	0
John Bradley (Yockleton)		1	0
H. T. W.		1	0
Tom Murfitt		1	0

THE PROFITS OF BEE - KEEPING.

LADY HENRY SOMERSET'S TESTIMONY.

In an account, recently furnished to the London *Daily Mail*, of the working of the Lady Henry Somerset's Industrial Farm Colony at Reigate, her ladyship, after giving particulars of the various branches of work carried on in the institution, goes on to say :—

"We believe in work; but we believe that it should be varied, and as far as possible in the open air. Last year, in the 300-ft. glass-houses, we grew a good crop of tomatoes. All the pruning and picking was done by the women.

"The bees, however, are really our most successful venture. They have already repaid the whole of the original outlay, and given a profit as well. This season the eight hives yielded 300 lb. of honey, and the stocks were increased by swarms from eight to eleven, so that next season we ought to gain a very good profit if the season is favourable."

CHESHIRE B.K.A.

SHOW AT NORTHWICH.

Cheshire having separated itself from Lancashire as an Association, is now known as the "Cheshire Bee-keepers' Association," and its inaugural show of honey, &c., was held in connection with that of the Cheshire Agricultural Society at Northwich on August 29. The Duke of Westminster is President, and there is a very large and influential body of Vice-Presidents. There are, also, already over 300 members, and every effort has been exerted to make a successful debut at this county show; whilst the weight of honey shown could in no wise compare with such shows as Shrewsbury, &c., it may fairly be stated upon competent authority that the *quality* was excellent throughout, and it was the verdict of the judge that he had not seen such excellent *uniformity* at any show which he had previously visited in 1899.

Sections especially were better than have usually been seen this year, and there was not a single exhibit of inferior raw honey. The wax exhibits also were numerous and good. Appliances were not shown to any great extent, but the Cheshire Association did not feel itself warranted in offering large prizes for these, since it has to carry out a second show at Wirral on September 6 and 7 next.

The arrangements made by the Agricultural Society were, on the whole, very good—plenty of space being allotted. The Rev. J. F. Buckler, M.A., of Bidston Rectory, Birkenhead was the judge, and Messrs J. Molyneux and George Lambert the stewards. The Revs. T. J. Evans and E. Charley gave very valuable assistance—the former by two most instructive and admirable lectures in the Association's new bee-tent. A number of candidates for third-class expert certificates of the B.B.K.A. were examined at Mr. Molyneux's apiary.

The following are the awards :—

Complete Frame Hive (price not to exceed 15s.).—1st and 2nd, Smith's Seed and Bulb Depot, Oxton, Birkenhead.

Twelve 1-lb. Sections (open).—1st, W. Woodley, Beedon, Newbury; 2nd, H. F. Beale, Andover; 3rd, Harry Wood, Paradise, Lichfield.

Twelve 1-lb. Jars Extracted Honey (open).—1st, H. F. Beale; 2nd, W. Woodley, 3rd, S. Jennings, Over Tabley, Knutsford.

Bees-Wax.—1st, Miss Rice, Malvern House, Bowdon; 2nd, Dr. Percy Sharp, Brant Broughton, Newark; 3rd, Joseph Wrench, Hartford, Northwich.

Twelve 1-lb. Sections (members only).—1st, F. Dutton, Huxley, Chester; 2nd, W. E. Little, Eastgate-row, Chester; 3rd, N. V. Lyle Smyth, Barrowmere, Chester.

Twelve 1-lb. Jars Extracted Honey (members only).—1st, John Dutton, Littleton Hall,

Chester; 2nd, H. Edwards, Rossett; 3rd, Alfred Thomas, Frodsham.

Six 1-lb. Jars Extracted Honey (local class).—1st, Samuel Jennings, Over Tabley; 2nd, George, Lambert, Comberbach; 3rd, J. Harrop, Barnton.—(*Communicated.*)

GOOLE AND DISTRICT B.K.A.

The annual show of the above Association was held at Goole on August 17 in connection with the Goole and District Horticultural Society. There was a marked improvement in every class in the bee and honey section, the show of bee produce staged this year being undoubtedly the finest ever seen at Goole, and the task of adjudicating on the exhibits has becomemore onerous in consequence.

Mr. J. H. Howard, Holme, Peterborough, was the judge, and made the following awards:—

Six 1-lb. Sections.—1st, W. Woodley; 2nd, W. Smith; 3rd, Rev. J. R. Bradshaw.

Twelve 1-lb Jars Extracted Honey.—1st, H. F. Beale; 2nd, W. Woodley; 3rd, W. Patchett.

Two Frames of Comb Honey.—1st, W. Smith; 2nd, J. Giddy.

Single 1-lb. Jar Extracted Honey.—H. F. Beale; 2nd, W. Chester.

Observatory Hive with Bees and Queen.—1st, W. Chester; 2nd, J. Giddy.

Interesting and Instructive Exhibit.—A. Woodhead, Dr. Percy Sharp, J. Giddy, all equal.

MEMBERS' CLASSES.

Three 1-lb. Sections.—1st, G. Remmer, Knedlington; 2nd, A. Woodhead, Goole.

Six 1-lb. Jars Extracted Honey.—1st, W. Ramsey, Skelton; 2nd, T. Earl, Rawcliffe Bridge; 3rd, E. Wainman, Saltmarshe; 4th, A. Woodhead.

Three 1-lb. Jars Granulated Honey.—1st, W. Chester; 2nd E. Wainman.

Super of Comb Honey (not sectional).—1st, W. Chester; 2nd, A. Woodhead. *Beeswax.*—1st, T. Earl; 2nd, A. Woodhead; 3rd, G. Remmer.—(*Communicated*).

HONEY SHOW AT HORSHAM.

The annual show of honey, hives, &c., in connection with the Horsham (Sussex) Horticultural Association was held at Springfield on Thursday, August 28, and proved a great success. The weather being fine a very large attendance was ensured. The honey shown was of excellent quality. There were seventy-two entries and over half a ton of honey staged. Mr. H. W. Brice (assisted by Mr. M. Freeman) acted as judge, and made the following awards:—

Display of Honey not Exceeding 20 lb.—1st, M. Kilner, Billingshurst; 2nd, S. Bailey, Itchingfield; 3rd, F. Knight, Warnham.

Twelve 1-lb. Sections.—1st, F. Knight; 2nd, M. Kilner; 3rd, A. J. Carter, Billingshurst.

Beeswax.—1st, C. Pack; 2nd, M. Kilner.

Six 1-lb. Jars Granulated Honey.—1st, J. Weller, Capel; 2nd, T. Evershed, Billingshurst; 3rd, M. Kilner.

Shallow Frame of Comb Honey.—1st, A. J. Carter; 2nd, M. Kilner.

Twelve 1-lb. Jars Extracted Honey.—1st, C. Pack; 2nd, M. Kilner; 3rd, C. Gray, Rusper.

Mead.—1st, F. Silvester, Capel.

Honey Cake.—1st, M. Kilner.

Frame Hive, Suitable for Cottagers.—1st, Lee & Son.

COTTAGERS' CLASSES.

Six 1-lb. Sections.—1st, F. Knight; 2nd, C. Gray; 3rd, A. Parsons.

Six 1-lb. Jars Extracted Honey.—1st, C. Gray; 2nd, Silvester; 3rd, Parsons.

Super (Straw, Wood, or Glass).—1st, S. Bailey.—(*Communicated*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[3752.] We have had some refreshing showers during the past week, which are very acceptable after the long drought, and vegetation is looking brighter and greener for it. The young grass especially is improving, thus laying the foundation of a crop of honey for another year. Some may smile at this early period for me to be talking of another year's honey crop when the present season's harvest is barely gathered in, but it is by looking ahead—"foresight in business," some may call it—that we are enabled to secure the best returns. Those who wait for the good things of this life to turn up, instead of forecasting the future as far as possible, are usually left in the rear. In the bee business it needs one to be always on the alert to know our neighbourhood, its resources in the shape of bee-forage, and its times of fruition, so that we may work our stock according to the requirements of the particular district, and thus secure the best results. I know, of course, "the best laid plans o' mice and men gang aft agley," yet notwithstanding disappointments we must ever push onwards, and hopefully do our best to get a share of the good things that Dame Nature bestows on those who "hold the cup rite-side up," as our American friends say.

The years roll on, and the straw skeppists are becoming gradually fewer in numbers every year; first we hear of some old bee-keeper who clings to the time-honoured skep joining the great majority, another has become too old and feeble to attend to the bees;

a third, and younger man, who may have offended his employer—maybe a steward over the whole parish. Anyway, the man has to leave the village, migrate to the town, and then we hear that another "small apiary is for sale." But who buys? Not the cottager or labourer; he has no reserve of cash, or he lacks the inclination; and thus the number of cottagers who keep bees grows less year after year. The county Bee-keepers' Associations started out twenty years ago with the object of remedying this state of things, but the conditions of life in country districts have undergone a complete revolution during the past twenty to thirty years. The old yeomanry, as well as the old husbandry, have passed away, and the old-time labourer is succeeded by a machine-minder. Every cottage was then occupied, and in most the cottage garden was graced by a few bee-hives, covered by a good useful hackle to protect them in the winter; but if a few hives are seen in a cottager's garden now they are generally found set up on nondescript stands—not the good, sound three-legged stools of a quarter of a century ago, and, instead of the dry hackles, a few old, half-rotten manure-bags too often cover them. Instead of the new swarms being put into nice clean and often new hives, any old makeshift hive or box (even a cheese-box) seems good enough for the bees. If we say a word against this state of things our modern cottager complains, and says "it doant pay to keep bees nowadays."

Work in the apiary should be attended to this month, first by not neglecting the reducing entrances to narrow proportion, to prevent robbing, and thus give the bees a little chance of defence, not only against their own *genus*, but against the wasps which have been more numerous during the last week than before this season. In going through the hives, preparatory to packing up for winter, keep a sharp look out for the larvæ of the wax-moth; against which a remorseless war of extermination should be waged. If any stock wants feeding, attend to it without delay, and if some are honey-clogged, perhaps an exchange of combs with some of the poorer ones may be beneficial to both, as giving the needed brood-rearing space to the one and the food required by the other, and with very little work to the bee-master. Remove weeds and grass from around the legs of hives. A coat of paint will help to keep out the damp of the coming autumn days, besides preserving the hives.

Our Watford friend's letter, "Recording the Honey Flow" (3,749, p. 341), is concise and explicit, showing at a glance all that the ordinary bee-man wishes to know. The card can be tacked up in the honey-room, store-room, or workshop, and thus become a continual reminder of the work required to be done in the apiary as the season advances.

The letter of Mr. Pearman, on page 342, opens up a wide question, and our foundation-makers will be able to answer the point whether foul broody-wax undergoes sufficient cooking to destroy the germs. Spores we shall, I fear, have to leave out of our calculations and deal with them as they develop into growth. Referring to the experiments of Professor Harrison, showing the need for continued boiling of honey in order to destroy spores, how does this compare with the description of boiling over—by a noted American bee-keeper—of a quantity of foul broody honey and which ran over the floor of the room? This honey had made a great mess and very soon the bees got a scent of the booty and cleared up the overflow as only bees can. Yet no infection followed, so that once boiling was sufficient in that case.

With solar wax extractors and only melting up the wax once to get it into saleable cakes it does nothing practically to kill the germs, and so in the future we shall have to depend on the foundation manufacturers to eliminate the germs more than we have in the past, as the boiling up of the old combs in the old style of wax rendering must have destroyed the germs if present. It seems to me the safest plan in the future will be to burn the old combs and frames altogether from foul broody stocks. This is a precaution which should be insisted on in every case, thus preventing infection spreading.—W. Woodley, *Beedon, Newbury.*

PRICE OF HONEY.

[3753.] I notice there has been some correpondence in your monthly *Record* of August and September in which one correspondent seems to deprecate what he calls "the manufacture of bee-keepers" by Associations because likely to increase the production of honey to such an extent and so much beyond the demand as to bring prices below a remunerative level. I expect this correspondent is a Protectionist; in any case he is a mistaken one in supposing that by curtailing production, prices will be maintained at a higher level. I remember when the bee-keepers went to the Mansion House and spoke of adopting measures calculated to increase the demand for British honey the Lord Mayor urged us to *increase the supply*, on the ground that demand would be sure to follow. I am thoroughly of his opinion.—A Kent Bee keeper, *September* 3.

(*Correspondence continued on page* 354.)

HOMES OF THE HONEY-BEE:

THE APIARIES OF OUR READERS.

Mr. Gough—whose apiary forms our bee-garden picture this week—evidently belongs to the active school of bee-men whose faith in the future of the craft as an adjunct to small farming is taking practical shape, so far as assisting to bring in recruits from the farmer class. He says:—

"From my earliest days I have taken an

interest in bee-keeping, as my father was a bee-keeper in the old-fashioned way, which has happily given place to a more humane and sensible method of treatment. As I can remember well the way in which my father, with the help of his old gardener, hived swarms and appropriated the season's honey, a short account of how it was done may be interesting to readers, by way of comparing old methods with the new.

"Being very young at the time, I was appointed to watch for swarms in summer and give what help I could later on when the honey was being taken and the bees destroyed. Strange to say swarming generally happened on a Sunday morning. Why bees choose this day in preference to all the others for swarming is as much a mystery to-day as it was in the time I speak of. In those days, however, a swarm of bees was a rather important item in a farmer's account, and one not to be overlooked. The word that the bees had swarmed having been given, there was at once such a banging of pots and kettles, and ringing of bells that a sort of bedlam on a small scale was produced until the bees "pitched," when the old gardener having previously prepared a skep (by using balm, sugar, and beer, to make it attractive to the bees) the swarm was hived.

"When 'taking' honey at the fall of the year, I remember a gruesome job was gone through. A stick, about a foot long, cleft at one end, had a piece of rag (previously dipped in melted brimstone) inserted in the cleft. A hole about a foot deep was dug in front of the hives, and in the bottom of this the stick was thrust, the brimstoned rag 'fired,' and each condemned skep of bees gently taken off the floor-board and placed over the deadly fumes. In a very few seconds all was over, and the bees were dead, this operation being repeated until all the hives to be 'taken' were dealt with. The lightest ones were left with their stores until the following year. This item of bee work was gone about in the darkness of the evening, and I generally assisted by holding the lantern. Then came the process of 'straining' the honey. A large earthenware pan-mug was placed before the kitchen fire, across which mug was placed a sieve resting on a couple of sticks, and on the sieve a piece of cheese-cloth. The combs were then cut from the skeps, and, after slicing them up, were put on the cheese-cloth and allowed to drain. When the honey had all drained through, the comb was put in the boiler along with some water, and, after coming to the boil, was allowed to cool, the cake of wax then being taken off, and the liquor strained through a piece of flannel. The liquor was then again put back in the boiler, some honey and spices added, and the whole allowed to boil and, when cool, was put in a cask and kept for a year, when it was fit for use as a household beverage as mead. How different to all this is the bee-keeping of to-day!

"It is now about twelve years since I com-

MR. EDWIN S. A. GOUGH'S APIARY, CONGRESBURY, NEAR BRISTOL.

menced bee-keeping on the modern system. Having accidentally met the expert of the Bristol B.K.A. (Mr. John Martin), I was induced to join the Association, and have now been a member for a good many years. My apiary consists of over twenty hives, worked for both extracted honey and sections.

"Congresbury is on the Cheddar Valley Branch of the Great Western Railway, about 1½ miles from the Yatton Junction of the main line.

"In spring the bees gather chiefly from apple blossom, there being many apple orchards in the neighbourhood. After this bloom is over there is no special source of supply in sufficient quantity to give the honey any particular flavour. In April my bees bring in pollen freely from box-hedges, of which there are some very high ones adjoining my apiary.

"Foul brood, I am happy to say, has not yet touched any of my stocks, although I have seen it in hives I have worked at in this neighbourhood. I believe in having only strong stocks, with a young, prolific queen, and keeping the hives scrupulously clean and warm, with as little disturbance as possible, plenty of food, and the constant use of disinfectants as a preventive of disease.

"Regarding the profits of bee-keeping I can only say that I am satisfied with my return. To a certain extent it is a 'labour of love' with me, watching the little labourers incessantly at work, but I don't ignore the commercial side of bee-keeping.

"This year I am expert to the Association for this district, and on my rounds I hope to induce farmers and others to become members by pointing out the possibility of their putting a few more pounds per annum into their pockets by taking an interest in bee-keeping. This source of income has hitherto been neglected by farmers, but I think the day is not far off when they will see the advantage of taking an interest in an industry which gives so much and asks so little.

"In concluding this brief account I may say that the tall ornamental hive on my right hand in photo is one I bought some years ago from the grand-daughter of a gentleman who had been apiarist to the late Prince Consort. The cover is octagonal in shape, and contains inside a straw skep with five small bell glasses on the top; it is fitted with a lock and key, and I need hardly say it is more ornamental than useful, besides getting somewhat shaky, as it must have been made some thirty or forty years ago. However, I have a stock of bees in it at the present time.

"The 'Wells' hive, nearest you in the photo, I purchased from the expert (Mr. John Martin), and am working it on the double-queen system. Last year it gave very good results. I think that a great thing towards working this type of hive successfully is to divide the bees early in the autumn, so that each queen has her share of bees for the winter."

CORRESPONDENCE.

(*Continued from page* 352.)

BEES IN THE ISLE OF MAN.

THE "RECORD" OF 334 LB. FROM ONE HIVE BEATEN.

[3754] I am much obliged for your reply to my last letter, and now send you a sample of honey which I extracted yesterday from my best hive. You will notice the heather flavour more pronounced than in the sample sent a couple of weeks ago. The honey forwarded to-day is taken from a super containing eleven 6¼-in. frames, from which I extracted 49½ lb. I am proud to say that this hive has now established a new "record" by a substantial increase in weight over the previous record of 334 lb., taken by myself from a single hive in 1897. I have had a wonderful season, and the greatest part of my crop is heather honey of prime quality. The weather broke up here on the 28th ult., and unless it changes soon we will get no more honey this season.

Re Heather Honey.—I never had to break combs to extract it. I am always able to get it out clean with an ordinary extractor, but the temperature has been continually between 60° and 70°, and possibly the fact that honey is obtained from other sources at same time makes removal of the heather honey easier.—LANCELOT QUAYLE, *Glenmay, Isle of Man, September* 1.

THE WEEK'S BEE-WORK.

[3755.] I take your JOURNAL regularly and find it most useful, but I think it might be made still more so, especially to beginners like myself, if you could give an outline of what is necessary to be done in the apiary, either every week or once a month, on the same principle as a gardener's paper has a space set aside for directions as to what seeds ought to be sown every week. Not only would the above be useful to beginners, but to all who take up bee-keeping as a hobby, while having many other matters to occupy their attention, as it would serve to jog their memories when looking through the JOURNAL of what is necessary to be done each week.—STANLEY TOWSE, *Catford.*

[The difficulty in complying with the suggestion made by our correspondent lies in the fact of the B.B.J. circulating in all quarters of the United Kingdom "from John o'Groats to Land End," to say nothing of copies going to many quarters of the world where entirely different weather conditions exist to our season at home. The most that can be done in this direction, therefore, is to follow the course adopted in our monthly, the *Bee-keepers' Record*, wherein each issue concludes with a page or so of "Work for the Month." Even here, however, the same trouble arises in a greater or less degree owing to the variation in seasons North and South. So much must perforce be left to the judgment of bee-keepers

themselves that we consider the directions on "General Management" for spring, summer, autumn, and winter as given in the "Guide Book," cover the whole ground as far as it can be covered, and without a good book on bee-keeping no beginner can hope to succeed.—EDS.]

CHAPMAN HONEY PLANT.

[3756.] For the last three years I have grown the handsome tall thistle called "Chapman's Honey Plant" for the benefit of my bees. The seed was kindly sent me by one of your contributors. But though the plants are crowded with bumble bees, my own bees never come. They are in the mignonette and cornflowers I grow for them in the same bed, but they will not look at the thistle. I am told their trunks are too short to work the flower; but if other people's bees like it, I do not see why mine should not. I shall be much obliged if you can give me any reason for this fancy on their part. Or is it a fact that this flower suits American bees and not English ones?—C. E. G., *Rugby, August* 21.

[In some seasons during the late autumn bees work freely on the "Chapman Honey Plant," though we do not think that any appreciable quantity of honey is got from it. This is the view evidently held in America, where it has been given up as a bee-plant for some time.—EDS.]

THE SEASON IN PEMBROKESHIRE.

[3757.] Please give me your opinion on sample of honey sent herewith? Owing to the frosts which visited this neighbourhood so late, we have had no fruits on our big trees. Currants were good, but gooseberries a failure. The two crops of clover did not put in an appearance. Heather bloom is abundant.

We were obliged to feed our stocks after the "Royal," and most of August was without profit to the bee-keeper. Strange to say, the net result of such a peculiar season has been good, both in quantity and quality.—W. H. A. W., *Treffgarne, September* 2.

[The honey sent is good in quality, with a strong dash of heather flavour in it.—EDS.]

BUYING SECTION GLASSES.

[3758.] 1. I see in last B.B.J. in answers to queries on page 347, that there is some complaint in regard to section glasses sold by a firm who advertised them in your pages. I also sent five shillings about a fortnight ago for two gross of glasses to a firm who advertises in B.B.J., but have not yet had the glass or any reply so far. 2. Would you please let me know through JOURNAL what were the shape, size, and weight of the wax that was shown at last "Royal" Show in the class for "wax in cakes suitable for retail trade?"—JNO. BERRY, *Llanrwst, North Wales, September* 2.

WEATHER REPORT.

WESTBOURNE, SUSSEX.
AUGUST, 1899.

Rainfall, ·88 in.
Heaviest fall, ·26 in., on 29th.
Rain fell on 8 days.
Below aver., 1 64 in.
Maximum Temperature, 84°, on 3rd.
Minimum Temperature, 48°, on 22nd.
Minimum on Grass, 44°, on 22nd.
Frosty Nights, 0.
Sunshine, 308·9 hrs.
Brightest day, 1st, 14·1 hours.
Sunless Days, 0.
Above average, 105 hours.
Mean Maximum, 72·7°.
Mean Minimum 55·4°.
Mean Temperature, 64°.
Above average, 4 7°.
Maximum Barometer, 30·62°, on 1st.
Minimum Barometer, 29·88°, on 31st.

L. B. BIRKETT.

METEOROLOGICAL

OBSERVATIONS TAKEN AT DUDDINGTON, STAMFORD, NORTHANTS, FOR THE WEEK ENDING SEPTEMBER 2, 1899.

1899.	Bar. in.	Tem. 9am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Aug. 27....	29 86	66·5	80	54	26	66 2	—
,, 28....	29·82	67·0	74	53	21	62·1	·04
,, 29....	29·88	64·0	72	48	24	59·3	—
,, 30....	29 80	64·9	73	58	15	65·1	—
,, 31....	29·85	62·1	70	50	20	59·4	·13
Sept. 1....	29·70	58·8	68	53	15	60·1	—
,, 2 ...	29·70	61·1	66	51	15	58·1	·09
Means	29 80	63 5	71·9	52·4	19·4	61·6	·26*

* Total, ·26 in.

Mean vapour tension, 0·390 in.; mean relative humidity, 67 per cent.; mean temp. of the dew point, 51°·9. The rainfall, viz., ·26 in., = 5,881·98 gallons, or 26·26 tons to the acre, or 1 30 lb. to the square foot. For the week ending August 26, the mean temp., viz., 65°·5, was +5°·6, and the rainfall, viz., nil, was −·50 in. The mean temp., July 30 to August 26, viz, 64°·2, is +3°·4, and the rainfall, viz., ·67 in., is −1·60 in. The rainfall, January 1 to August 26, viz., 11·71 in., is −3·87 in.

FRED. COVENTRY.

Duddington, Stamford, September 4.

Queries and Replies.

[2268.] *Transferring from Skeps to Frame-hives.*—On July 6 last I purchased three swarms (May and June) in old, weather-beaten, contracted skeps and moved them to my residence (four miles). As a beginner I was advised to let the bees remain in these hives, and they seem to have been doing well from the weight. As they now stand, the hives are only 5 or 6 in. apart, but they are well filled with comb. I want to do away with these old hives and get the bees in frame-hives at the best and most convenient

time. I have one new hive ready, and could get the others at once. I have only just commenced bee-keeping, and would ask :—1. When is the best time to transfer the bees and combs from skeps, and if by driving, should it all be done on the same day? 2. Are the skeps now too near for transferring, and how far apart should the bar-frame hives be placed when transferred? 3. Must all the comb from skeps be fixed in the new frames and after the bees have been transferred to them? 4. Will some of the frames require foundation. 5. The new hive has in all twenty-two shallow frames; should the new queens be allowed to remain if hatched out, or destroy the old ones? —W. H. Buck, *Dawley, Shropshire, August* 19.

Reply.—1. For a beginner with less than a couple of months' experience of bee-keeping, it would be a most unwise course to run the risk of utter failure in undertaking the task of transferring the bees and combs from three skeps to frame-hives. The best advice we can offer is to leave transferring alone for the present season at least, and as the swarms have done well and will evidently be in good condition for the coming winter, allow them to remain in their present domiciles till early next spring. If in April or beginning of May the skeps are fairly strong, set each one above the top-bars of a frame-hive (the frames of which have been fitted with full sheets of comb foundation) and allow the bees to transfer themselves into the hive below. That is safest, best, and easiest way of transferring, especially for a beginner. 2. If transferring is determined on, the frame-hives should be placed as nearly as convenient in the same positions as the skeps now occupy. 3. By way of avoiding "chilled brood" the old combs containing larvæ must be got into the frames as quickly as possible, and placed among the bees for warmth. 4. We should give no sheets of foundation at this season, but simply patch up about five frames of comb from the skep and winter the bees on them. 5. We cannot make out what kind of hive it is that "has in all twenty-two shallow-frames of comb." Nor do we understand your mention of "new queens being allowed to remain if hatched out." There will be no hatching queens in the skeps now. Kindly explain this?

[2269.] *Honey from Questionable Sources.*—I herewith send you two small samples of honey from one of my hives this year. The "clear" was obtained the first week in August, and the "red" during the third week of the same month, both samples being from the same hive. You will easily understand what is meant by "clear" and "red" by the contents of the phials. I should feel much obliged if you could tell me—1. What is the reason of the difference in colour? (A friend says the red is collected from balsams.) 2. Are both good for home table use? 3. Which is best of the two? 4. What is the quality of the honey—good, bad, or indifferent? 5. Has not honey to pass through the bee's body in the usual way? and do we get red honey from red flowers, and so on? In my garden there is a glass bell in which grows a water plant, *Ponedtria crassipes* (*Eichhornia speciosa*). The bees are very fond of the water in this bell. I have counted as many as thirty drinking it at one time. On the other side of the garden walk there is another glass bell containing a *Nymphœa alba*, but the bees will not touch this, though the water is clearer, and it has nice large leaves for the bees to rest upon. I have also put pure water close to, but the bees prefer the contents of this particular bell, and will not touch it. 6. Can you give a reason for this?—A. L. D, *Heaton Mersey, August* 27.

Reply.—We can best reply to queries 1 to 4 by saying that, in our opinion, the samples of honey received have both been gathered from a spot in close proximity to a jam factory (or where jam was being made), the "red" being from red plums and the "clear" from a green variety of the same fruit. 5. Honey as stored in the cells does not pass through the body of the bee at all. The nectar, as gathered from the flowers, is passed into the honey sac, and (if intended for storage in the comb) is re-gurgitated therefrom after being converted into honey. Such honey as is consumed by the bee as food of course passes through its body, but not otherwise. 6. We do not possess sufficient knowledge of the plants named to explain the preference shown by the bees as stated.

[2270] *Bees Building Queen Cell at End of August.*—After taking the super off my one stock, I found the bees rapidly filled up the brood-chamber with honey. They were only on eight frames, so I gave them two more with full sheets of foundation; these were worked out and filled in less than a week, so on August 30 I took out a frame of honey and put one in with new foundation. On looking at this to-day, I find that it has been partly worked out and a queen cell built, but no egg in it. There is a quantity of brood and some eggs on the other combs. What is the meaning of the queen cell at this time of the year? The queen is, I believe, a last year's one, and has, to my idea, done well. I could not find the queen, but as there were eggs, not more than a day old, I have no doubt she is all right.—R. T. F., *Leek, September* 4.

Reply.—It will be well to get a sight of the queen before making quite sure she is there. If found, however, and eggs are still being laid freely we should take no notice of the embryo queen-cell.

Bee Shows to Come.

September 13 and 14 at Derby.—Eighteenth annual show of the D.B.K.A., in connection with that of the Derbyshire Agricultural Society.

September 13 and 14, at Edinburgh.—Midlothian B K A, Annual Honey Show in connection with the Caledonian Horticultural Society's Exhibition in the Waverley Market.

September 30, at Jedburgh.—Annual Show of the Roxburghshire B.K.A., in the Church Hall, Queen-street. Twenty-five classes for honey, &c. Schedules from Thos. Clark, Secretary, Pleasants, Jedburgh, N.B. **Entries close September 26.**

September 30 to October 7 at the Agricultural Hall, London.—Honey Show in connection with the fourth Annual Exhibition of the Grocery and Kindred Trades. Classes (open to master grocers only) for comb-honey in sections and for extracted honey. (See advertisement on page v.) **Entries close September 16.**

October 17 to 20 at the Agricultural Hall, London.—Show of Honey and Bee-produce in connection with the British Dairy Farmers' Association. Numerous and liberal prizes for honey, &c.—Schedules from Mr. E. Young, Secretary, 12, Hanover-square, London, W. (See advertisement on page 358.) **Entries close September 18.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

E. C. S. (Notts).—1. Comb contains no brood at all nor any trace of such. Although old and needing renewal there is nothing worse in cells than honey and pollen. 2. We cannot detect any "putrid kind of smell" in comb as stated.

"SHORE" (Cheltenham).—*Honey for Showing.*—The sample received is very good honey, but as to its "chance at the Dairy Show" that, of course, depends on what is staged against it. It is not entirely from clover but from mixed sources.

R. D. C. (Cornwall).—Your sample is fairly good section honey; nicely sealed, &c., but the flavour is not first class.

A BEGINNER (Penn, Amersham).—*Utilising Condemned Bees.*—Had the fact of there being honey in skep been mentioned we should have advised you with regard to it. 1. It will be best to remove the skep and let the bees store their winter food below. They will need about 25 lb. of stores to winter safely. 2. Send name and full address and we will forward copy of our monthly.

G. MUNGEARN (Cobham).—*Bee Parasites.*—The queen bee sent is thickly infested with the parasite *Braula cœca*, or blind louse. They are a nuisance in hives, but the parasite luckily does not thrive or live long in this country.

J. C. (Belfast).—Comb sent is decidedly affected with foul brood.

W. G. (Nonington).—Comb contains nothing worse than pollen.

W. H. BUCK (Salop).—*Judging Strength of Skeps in Spring.*—An experienced hand would give a puff of smoke and turn the skep up to judge its strength. A beginner is generally content to see the bees working very busily and carrying in plenty of pollen. Both of these latter symptoms afford a good general criterion of the colony's strength.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

WANTED, OFFERS for Clover and Heather Honey in bulk or jars. Samples, 3d. Also FEW DOZEN SECTIONS. Deposit. KNEWSTUBB, Longmarton, Carlisle. 445

EXTRACTED HONEY, 50s. cwt.; tins extra; returnable; sample, 3d. APIARIST, Dyke, Bourne.

FOR SALE, 250 SECTIONS, 1 cwt. EXTRACTED. Both very good. H. HARBOR, Isington, Alton. 443

CHOICE TESTED QUEENS; safe arrival; price very moderate. GAMBRILL, Bagshot-road, Ascot. 440

HEALTHY DRIVEN BEES, 1s. per lb., in lots about 5 lb. LACEY, Crow, Ringwood. 439

23rd YEAR.—Strong STOCKS in Skeps, 10s. 6d. on rail. ALSFORD, Expert, Blandford. 437

WELL-FILLED SECTIONS at 6s. 6d. per dozen. T. FARLOW, Forest Side, Emsworth. 436

SECTIONS, 7s. doz. best quality. LING, Shady Camp. Linton, Cambs. 434

150 well-filled SECTIONS FOR SALE, 7s. a dozen. HUNT, Bickerley, Ringwood, Hants. 441

HONEY FOR SALE.—About 4 cwt., chiefly clover, 6d. lb.; also 3 doz. good Sections. Sample free. H. PUGH, Boxted, Bury St. Edmunds. 453

EIGHT strong SKEPS of BEES, very heavy, with young Queens, 14s. each. C. SMITH, Wheatacre, Beccles, Suffolk. 452

WHAT OFFERS? BEES or HONEY, for new geared EXTRACTOR (Meadow's), cost 30s. NEWMAN, 57, Coldharbour-lane, London, S.E. 451

FOR SALE, three strong STOCKS, second-hand APPLIANCES, HONEY. 11, Higher Park-view, Heavitree, Exeter. 450

FOR SALE, 1 cwt. of splendid ripe CLOVER HONEY, price £3. Sample, two stamps. BAILEY, Itchingfield, near Horsham. 449

HONEY in Bulk, 53s. cwt.; 2 cwt, £5. Samples, 5d. OWEN BROWNING, Kingsomborne, Stockbridge, Hants. 435

FOR DISPOSAL, several Lots of BEES (grand workers) in bar-framed hives; honey untouched. COLEMAN, Veterinary Surgeon, Swindon, Wilts. 444

FOR SALE, 6 cwt. finest light-coloured (fresh) EXTRACTED HONEY in ½-cwt. tins, 56s. per cwt. Tins and package free. Sample, 2d. A. E ROWELL, Saffron Walden, Essex.

HONEY, Clover and Sainfoin, 56s. cwt.; tins and crates free; 12-lb. tins 6½d. lb. Splendid quality SECTIONS, 7s a doz. Samples, 2d. H. MAY, Kingston, Tetsworth. 442

CHOICE YOUNG QUEENS from docile, prolific, and industrious stock, 3s. 9d. Delivered safely in introducing cages. Reduction on quantity. Circular post free. EDWARDS, "Beecroft," Ashford, Staines. 370

BEES.—FOR DISPOSAL, two Standard Bar-frame HIVES, all honey untouched; celebrated working strain; bees very strong. Mrs. LUCAS, Vasterne Manor, Wootton Bassett, Wilts.

HEALTHY DRIVEN BEES with young Queen, at 1s. 3d. lb. Box returnable or 1s. Young QUEENS at 2s. each. Prime SECTIONS, 7s. a dozen. E. GARNER, Broom, near Biggleswade, Bedfordshire. 433

FIRST-CLASS SECTIONS, 9s. per dozen, or offers; also Extracted HONEY in 1-lb. bottles, nicely labelled. Reduction on quantity. Miss E. A. FISHER, Heathend Farm, Loudwater, Bucks. 448

FOR SALE, several strong STOCKS of BEES on ten Standard frames; good hives, with medicated stores for winter; with super of ready-built Combs or Section Crate, 25s., free on rail. J. BEAMAN, Tenbury. 438

HEATHER HONEY.—A large quantity of the very finest pure HEATHER HONEY FOR SALE, in 1-lb. and 2-lb Sections, gathered from one of the finest glens in the Grampian Hills. The Honey belongs to the members of a local Bee Association in Perthshire. What offers? Apply, R F. PATTON, Luncarty, Perthshire. 446

BRICE'S RELIABLE QUEENS. Well-known strain, one quality, one price. Mated tested Queen, 5s. 6d., post free in perfected travelling and introducing cage. Safe arrival guaranteed. HENRY W. BRICE, 100, Brigstock-road, Thornton Heath.

Prepaid Advertisements (*Continued*)

23RD YEAR.—RE-QUEEN NOW also Strengthen Stocks (see my advertisement). ALSFORD, Expert, Blandford. 422

2-OZ. Glass Tie-over HONEY JARS, best quality, 2s. 9d. half a gross; 5s. gross. RUDD, Grimston, Norfolk. 420

HONEY LABELS, new design, including name and address, 1,000, 7s. 6d.; 500, 4s. 6d. GUEST, King's Norton. 417

EXTRACTED HONEY, 5d. and 6d. Samples 3d. each. SALMON, Bee Expert, Haresfield, Gloucestershire. 402

1,000 lb. good light HONEY, 6d. lb.; sample 3d. Apply, JOHNSON & SON, Soham, Cambs. 410

PROLIFIC QUEENS, Nuclei, Stocks (Skeps and Frame Hives), and Swarms. E. WOODHAM, Clavering, Newport, Essex. 447

ENGLISH MADE HONEY JARS (1-lb. screw-cap), 14s. per gross; sample, 6d. JAS. DYSON, Stainforth, Doncaster. F.N.

"W.B.C." HIVES.—Make your own at third the cost. For particulars, send stamped addressed envelope. PRIDEAUX, Whitchurch, Salop. 302

QUEENS, STOCKS, NUCLEI, and SWARMS. A few more orders can be accepted. List free. Rev. C. BRERETON, Pulborough, Sussex.

NEW HONEY.—WANTED, 1-lb. SECTIONS, clean, not dark, well-filled, and sealed. Any quantity. State lowest price for cash. M. CHARLTON, 42, Fawcett-street, Sunderland. 415

COMFORTABLE APARTMENTS for Brother Bee-keepers visiting Douglas. HORSLEY, Merridale House, Empire-terrace, Top of Castle Drive, Isle of Man. 432

FURTHER REDUCTIONS. TRANSPARENT CELLULOID QUILTS, post free, 1s. 6d.; CELLULOID QUEEN EXCLUDERS, post free, 1s. 6d. R. H. COLTMAN, Bee-Appliance Maker, Burton-on-Trent.

GOOD HEALTHY QUEENS; only 1s. 6d. each; 10 for 12s. 6d. Replaced if not satisfactory. Also some good guaranteed 1899 QUEENS, 2s. each. Approval with safe arrival, &c. A few cwt. Honey to clear at 5d. lb., packed. SPEARMAN, Colesbourne, Andoversford. 416

I CAN spare a few strong STOCKS of BEES from my apiary, 15s. each, or in Lee's "Holborn" Hive, 30s. each. Standard frames. Guaranteed healthy and free from foul brood. Packing cases free not returnable. EDWARD ROBB, The Apiary, Outwell, Wisbech. 425

23RD YEAR.—SWARMS, with Queens, 5s. 6d. cases free; QUEENS, 3s. 9d. delivered; Three-frame NUCLEI, Bees, Brood, and Queen, 12s. 6d. cases free. All the above queens selected '99. ALSFORD, Expert, Blandford. 423

HEALTHY DRIVEN BEES at 1s. 3d. per lb., not less than 4-lb. lots with queen. Boxes returnable; also young Fertile Queens at 1s. 6d.; post free; ninth season. R. BROWN, Flora Apiary, Somersham, Hunts. 380

CHOICE Young BLACK QUEENS. Natural raised, tested, and safe arrival guaranteed, 2s. 6d. each, post free. Also a few lots of Driven Bees at 1s. 3d. per lb., in 4 or 5 lb. lots, with Queen. Boxes to be returned carriage paid. A. J. CARTER, Newfields, Billingshurst, Sussex.

LACE PAPER for SECTION GLAZING (something new), in white, pale green, and pink; 1 in. wide. 100 strips, 7d.; 200, 1s. 2d.; 300, 1s. 6d.; 500, 2s. 3d.; 1,000, 4s. Also LACE BANDS (lace edge both sides), 2⅞ and 3⅝ in. wide. White: 100, 1s. 3d.; 200, 2s. 3d.; 300, 3s.; 500, 4s. 9d. Pink and Pale Green: 100, 1s. 6d.; 200, 2s. 9d.; 300, 4s.; 500, 5s. 6d. (Samples of each kind and colour, 3d.) All post free. W. WOODLEY, Beedon, Newbury.

DAIRY SHOW,
LONDON,
October 17, 18, 19, and 20.

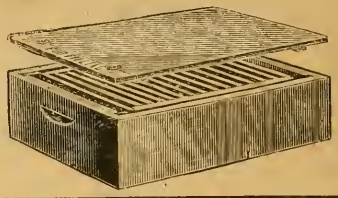
LIBERAL PRIZES FOR HONEY, &c.
Reduced Fees to Members of
B.B.K.A. or Affiliated Societies.
ENTRIES CLOSE SEPTEMBER 18th.
Wm. C YOUNG, *Sec.* **12, Hanover Sq. London, W.**

The Messrs. ROOT, of Medina, while thanking customers for their patronage, express regret for the unusual delay in ocean transit of Goods during the past season, and, to prevent a recurrence of same incident on Spring Shipments, would be pleased by having all Orders sent in this month (September).

They have a LARGE STOCK of BEST **WHITEWOOD LUMBER** ready for immediate manufacture.

WM. BOXWELL,
Patrickswell, co. Limerick.
(Wholesale Agent for the A. I. ROOT CO., Medina, Ohio.)

Notice.—
ERNEST W. GODDARD & CO.
THE MODEL APIARY,
Wash Road, NEWBURY; and New Farm, Cold Ash, BUCKLEBURY.
Manufacturer of all kinds of Bee Appliances.
HIVES and QUEENS a Speciality!
Best Centre for South and West of England.
NOTE.—2d. per lb. off Super and Brood Comb to clear.
FRAMES, 6s. per 100. *Send for his Catalogue, post free.* N.B.—Inspection of his Apiaries invited.
Any Quantity of good Sections bought.



FEEDERS.
BEST MADE.
W. P. MEADOWS,
SYSTON, NR. LEICESTER.

SLADEN'S "ROYAL MAIDSTONE" PRIZE HIVE
(on the "W.B.C." plan; no plinths), as exhibited at the "Royal" Show, with two lifts and supers, 17s. 6d.

SPECIAL STRONG FRAMES,
with hardwood top-bars, extra thick between the uprights; top-bar cannot break with weight of honey, 1s. 6d. per dozen; 50 for 5s. 6d.

SLADEN'S HARDY and PROLIFIC ITALIAN BEES, also PLANTS and SEEDS for BEES.
Particulars on application.

Besides the above special articles, all BEE-KEEPERS REQUISITES are kept and Supplied Promptly at moderate prices. Orders of £5 in value carriage paid to any Station in England, £2 carriage paid to London.

GOOD ENGLISH HONEY WANTED.

F. SLADEN, Ripple Court Apiary, nr. Dover.

8TH SEASON.

IMPROVED CARBOLINE POMADE
THE PERFECT REMEDY FOR BEE STINGS which gives almost instant relief from pain and prevents inflammation. Price, per box, **1s.**

DIRECTIONS.

BEE STINGS.—Extract sting, and apply Pomade freely with a camel-hair brush; gives relief in a few seconds from the horrible smarting and burning inflammation.

PREVENTION.—Before opening hive give a few puffs of smoke (having previously rubbed the hands and wrists until they are covered with Pomade); reduces to a minimum the stinging of bees whilst manipulating.

To prevent robbing and exclude insects, paint the parts that rest on each other, &c., with Pomade.

Price, **1s.** per box.

Can be obtained from the principal Bee-Appliance Manufacturers and from the Manufacturer,

T. HOLLIDAY,
Astbury, Congleton.

Editorial, Notices, &c.

THE FINAL HONEY SHOWS FOR 1899.

AN OPPORTUNITY FOR BEE-KEEPERS.

We last week brought before the notice of bee-keepers, who are readers of this journal, some particulars regarding the coming honey show to be held at the Royal Agricultural Hall, in connection with the Grocery Trades' Exhibition, next month; and we have now a similar duty to perform with reference to the Dairy Show, which takes place in the same building on October 17 to 20.

This popular show is now so well known to all B.B.J. readers — whose interest in the craft extends beyond their own homesteads — that it only needs to name the date and say when the entries close in order to put bee-keepers who have secured good samples of this year's produce on the *qui vive* as to their honey being likely to win. This is as it should be, but there is still a want we should like to see filled, and it would be very gratifying if a united effort were made in that direction. We mean that no county in the kingdom should be unrepresented on the show bench at the "Dairy," and if county secretaries, who not seldom possess some knowledge regarding the holders of good samples, would make a personal effort in the line we have indicated, it would no doubt assist greatly in singling out the best honey districts in the kingdom. This would be useful in many ways, and we hope our hint will be taken, so far as urging those to whom reference has been made, to make an entry for the Dairy Show at once, as the date for closing entries is only four days distant, viz., Monday, the 18th inst.

Since our last issue we have been notified of another important exhibition whereat a special feature is made of honey, viz., the "British and Colonial Industrial Exhibition," to be held at St. James's Hall, Manchester, on September 25 to October 21. The Honey section of this show is (as we read in an advertisement on page iii. of this issue) held under the auspices of the Lancashire Bee-keepers Association, and with liberal money prizes and so favourable an opportunity as is apparently afforded for bringing together producers, retailers, and consumers, we have no doubt a good entry will result, and a good display be made. There is, however, no time to be lost for making entries, which, we see, close on Thursday next, the 21st inst.

The three exhibitions referred to form a trio of opportunities for bee-keepers such as has never, we think, before occurred for developing the sale of British honey, and we shall be much mistaken if bee-keepers do not rise to the occasion and freely avail themselves of the obvious advantages to the industry which must arise therefrom if the shows are supported as they should be. It needs but to say that the visitors to all three shows will be numbered by hundreds of thousands, the value of the "opportunity" will be apparent.

BRITISH BEE-KEEPERS' ASSOCIATION.

The September meeting of the Council was held on Friday, the 1st inst., at 105, Jermyn-street, S.W. Mr. E. D. Till occupied the chair, and there were also present the Hon. and Rev. Henry Bligh, Messrs. W. Broughton Carr, J. M. Hooker, J. H. New, E. Walker, C. N. White, F. B. White, and the Secretary. Letters explaining enforced absence were received from Miss Gayton, Messrs. R. T. Andrews, H. W. Brice, W. H. Harris, H Jonas, and T. I. Weston.

The minutes of the previous meeting were read and confirmed.

The following new members were duly elected :—Mrs. Lea Smith, Bowls, Stanmore ; Mr. Samuel Jordan, 39, Badminton-road, Bristol.

The Finance Committee's report, as presented by Mr. New, gave full particulars in regard to income and expenditure during the months of July and August. A list of payments recommended was also brought forward and the report approved.

The Education Committee reported results of examinations for Third Class Experts' Certificates at Louth, Hull, Wolverhampton, Liverpool, Beddington, Chingford, and Northwich. It was resolved to grant Certificates to the Rev. E. Charley, Misses E. E. Scot-Walker and S. Wilson, Messrs. G. R. A'der, W. E. L. Allen, J. N. Bold, Geo. Cook, H. Edwards, C. B. Elmhirst, A. M. Fielding, W. Forrester, W. Hampton, Alfred Jones, W. Loveday (Foul Brood), T. Moore, G. F. O'Fflahertie, H. A. Roberts, A. J. Scholfield, John Taylor, E. Venables, and J. H. Walmesley.

A number of matters arising out of correspondence were dealt with by the Council, and the Secretary instructed thereon.

GROCERY TRADES EXHIBITION AT MANCHESTER.

An open competition (for master grocers only) was held in connection with the Second Northern Counties Grocery Exhibition and Allied Trades, at St. James' Hall, Manchester, on September 5 to 13. There were two classes, for extracted and section honey respectively, and the samples staged were mostly of a very high quality. This feature is a very commendable way of bringing producers of British honey in touch with the dealers. Only honey gathered in the United Kingdom was permitted to be staged, and it is to be hoped that more exhibitions of this class will be held, as a better means of advertising genuine British honey could not well be devised.

The judges were Rev. J. F. Buckler, Bidston Rectory, and Mr. Fredk. H. Taylor, Fallowfield, Manchester; and their awards were as follows:—

Twelve 1-lb. Jars Extracted Honey.—1st, E. J. Burgess, Compton, near Newbury, Berks; 2nd, R. Scotter, Murray St. Filey; 3rd, E. Knowles, St. Bartholomew-street, Newbury; v.h.c., A. E. Waller, Halliwell, Bolton; h.c., J. Little & Sons, Chester; W. Ward, Highousegate, York; and J. Parkin, The Sands, Appleby.

Twelve 1-lb. Sections.—1st, E. J. Burgess, Compton, near Newbury; 2nd, W. Ward, York; 3rd, J. Parkin, Appleby; h.c., A. E. Waller, Bolton; c., T. Bentley, Sandy-lane, Royton, Oldham.—*Communicated.*

YETMINSTER AND DISTRICT B.K.A.

SHOW AT BRADFORD ABBAS, DORSET.

The Yetminster District Bee-Keepers' Association held their seventh annual exhibition of honey at Bradford Abbas, in connection with the local Flower Show, on Thursday, the 31st ult., in the Rectory-field (by kind permission of the Rev. Gordon Wickham).

A large amount of honey was staged, and the exhibits, especially in the extracted honey classes, were extremely good, giving the judge, Mr. J. W. Jacomb-Hood, of Exeter, much trouble in making his awards, which were as follows:—

Standard Frame of Comb Honey.—1st, Mr. G. Leeding, Bradford Abbas; 2nd, Mr. Batten, Thornford; 3rd, Mr. Banger, Leigh; 4th, Mr. Bishop, Bradford Abbas.

Shallow-frame of Comb Honey.—1st, Mr. Trott, Totnell; 2nd, Mr. Bishop; 3rd, Mr. Banger; 4th, Miss Ffooks, Totnell.

Four 1-lb. Sections.—1st, Mr. Trott; 2nd, Rev. H. Dodington, Leigh; 3rd, Mr. S. Feaver, Compton; 4th, Mr. Vaux, Compton.

Bell Glass, over 10 lb.—1st, Mr. G. Leeding; 2nd, Mr. Banger; 3rd, Mr. Trott; 4th, Mr. S. Feaver.

Bell Glass, under 10 lb.—1st, Mr. G. Leeding; 2nd, Mr. Andrews, Thornford; 3rd, Mr. Trott.

Four 1-lb. Jars Dark Honey.—1st, Mr. Banger; 2nd, Mr. E. Higgins, Bradford Abbas; 3rd, Mr. R. Jeans, Bradford Abbas; 4th, Mr. T. Groves, Chetnole.

Four 1-lb. Jars Light Honey.—1st, Mr. Banger; 2nd, Mr. G. Leeding; 3rd, Mr. Andrews; 4th, Mr. Trott.

Bees' Wax.—1st, Mr. W. Pomeroy, Bradford Abbas; 2nd, Mr. G. Leeding; 3rd, Mr. Batten; 4th, Mr. Trott.

Collection of Honey and Wax.—1st, Mr. R. Jeans.

Collection of Honey and Wax (past winners only).—1st, Mr. G. Leeding; 2nd, Mr. T. Groves.

Single 1-lb. Sections (open).—1st, Mr. H. F. Beale, Andover; 2nd, Mr. S. E. Watts, Yeovil, Somerset; 3rd, Mr. G. Leeding; 4th, Rev. H. Dodington.

Best Bar-framed Frame Hive (open).—1st, Mr. E. Higgins; 2nd, Mr. Trott.

Bee Flowers (open: prizes given by Mr. Petter, Yeovil).—1st, Mr. F. Coombs, Bradford Abbas; 2nd, Miss Hilda Leeding, Bradford Abbas.

A number of bee appliances were shown (not for competition) by Messrs. Petter & Son, of Yeovil.

The bee demonstrations, under the direction of Mr. M. H. Tilley, were somewhat interfered with by the unpropitious weather, which also had an adverse effect upon the attendance at the Show.—(*Communicated.*)

UPPER CLYDESDALE B.K.A.

The annual exhibition of this Society was held on Friday, August 25, within the policies of Abington House, and there was a good display of honey, more especially from the heather. The day being fine, a large number of people assembled within the grounds. Unfortunately, neither Sir Edward nor Lady Colebrook, were able to be present, their beautiful residence, Abington House, having been destroyed by fire a year ago. The following were the prize winners:—

Three 1-lb. Sections.—1st, Robert Colthart, Abington; 2nd, Alex. Hunter, Abington.

Three 1-lb. Sections (Heather).—1st, Robert Colthart; 2nd, Alex. Hunter.

Three 1-lb. Jars Extracted Honey.—1st, Robert Colthart; 2nd, Alex. Hunter.

Three 1-lb. Jars Heather Honey.—1st, Robert Colthart; 2nd, Alex. Hunter.

Super of Clover Honey.—Mrs. Watson, Lamington.

Super of Heather Honey.—1st, Robert Colthart.

Super of Heather Honey (5 to 15 lb.).—Robert Colthart.

Three 1-lb. Jars Extracted Honey.—1st, James Petticrew, Lamington; 2nd, Alex. Hunter.

Beeswax.—1st, R. Colthart; 2nd, A. Hunter.

Display of Honey, &c. (Sir Edward Colebrook's Special Prize).—1st, R. Colthart; 2nd, J. Petticrew.

Box of Heather Honey (the Dowager Lady Lamington's Special Prize).—1st, R. Colthart; 2nd, J. Petticrew.

Messrs. Grierson and Hutchison, Lisnahago, were the judges.—(*Communicated.*)

LANCASHIRE B.K.A.

A large and enthusiastic meeting of ladies and gentlemen, members of the above Association, took place at Miss Wilson's apiary, Torrisholme, Morecambe, on Saturday, the 9th inst.

A lecture on "Artificial Swarming, Queen-rearing, and Autumn and Winter Treatment" was given by Mr. Fred. H. Taylor, lecturer to the Association, and was listened to with close attention. At its close a number of questions were put to and answered by the lecturer. While the lecture was proceeding, Mr. Williamson, expert B.B.K.A., was judging the samples of honey brought by the members present. The awards were as follows:—

Extracted Honey (16 competitors).—1st, Jas. Gorston, Middleton; 2nd, F. H. Taylor, Fallowfield; h.c., J. Huntley, Lancaster; h.c., R. Harrison, Lancaster.

Honey in Sections (8 competitors).—1st, Thos. Jones, Wegher Quarry; 2nd, Mr. Lamley, Carnforth; h.c., Mr. Harrison.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of August, 1899, was £1,358.—*From a return furnished to the* British Bee Journal *by the Statistical Office, H.M. Customs.*

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

LIME BLOOM IN AUGUST.

A VALUABLE BEE-TREE (*Tilia petiolaris*).

[3759.] On August 4, while judging the exhibits at the honey show at Frensham, in company with Mr. J. W. Lewis, of Farnham, I noticed a very fine lime tree just coming into bloom and alive with bees. The blossoms were larger than those of the ordinary lime tree and promised to be abundant when fully opened. On the date mentioned the common lime trees had ceased flowering for more than a week—in fact, much of the honey exhibited was this year's lime honey, and yet here was a tree offering a second abundant harvest. We were naturally anxious to identify the tree, and showed specimens of the flowers and foliage to Mr. Wright, editor of the *Journal of Horticulture*, who has been kind enough to make inquiries from several reliable sources. The results of his investigations are embodied in the enclosed extract from the *Journal of Horticulture* which will no doubt interest many of your readers. As the season for planting trees will soon be at hand, bee-keepers should use their influence with their horticultural friends to get *tilia petiolaris* planted in their neighbourhood. I think no one will regret adding this beautiful tree to their collection; it is even more handsome than the ordinary lime, to which it yields nothing in sweetness of aroma.—Walter T. Reid, *Fieldside, Addlestone, Surrey.*

[The extract referred to above by our correspondent reads as follows:—

A VALUABLE BEE TREE.

"The hum of bees in lime trees when these are in flower is familiar to all observers, and apiarians appreciate the large quantities of honey gathered during the, to them, too short season when the trees are yielding the coveted supply.

"On the occasion of a honey show at Pierrepont, Frensham, the beautiful seat of R. H. Combe, Esq., early in August, some of the members of the Council of the Surrey Bee-keepers' Association, which, in conjunction with the County Council, is carrying on an active and useful campaign in the county, discovered among the lime trees in the park a handsome specimen, differing from all others, and on which they set very great value as a honey-yielding tree. It was alive with bees, which had abandoned all other contiguous limes, for the simple reason that they were fast going out of flower, while the one over which they were rejoicing was just coming in. 'Here,' the experts said, 'is a grand successional flow—a doubling of the length of the lime honey season—and if the name of the tree can be obtained it should be made widely known for the benefit of apiarians.'

"Flowering specimens were thereupon sent to Kew, and identified by the authorities there as *Tilia petiolaris*. Recognising the fact that Messrs. James Veitch & Sons, Ltd., Chelsea, grow a collection of limes, samples were also sent there for comparison, as trees are not obtainable at Kew, and their reply was: 'We have no doubt the lime is *Tilia petiolaris*.'

"It is evidently a scarce form, and the price of the trees is comparatively high. This, however, is a small matter to those who wish to grow honey, of which a few trees will yield a large amount. Apart from that, no lime is more ornamental than the kind under notice. Its annual growths are strong yet pendulous; leaves large, dark green on the upper surface, silvery below; flowers larger and heavier than those of ordinary limes, and, as before said, later, this constituting the value of the species to apiarians.

"There are many beautiful features in the grounds of Pierrepont, and excellent work to be seen in the gardens, by Mr. Turner, while the great hall of the mansion, as furnished with stately palms and groups of plants, presented a distinguished and charming appearance."

[The value of a tree which provides such excellent bee-forage as does the lime bloom, and extends the gathering time for at least three weeks beyond the duration of the ordinary lime harvest, is of such importance to bee-keepers that we feel sure it will not be lost sight of, any more than will the valuable service Mr. Reid has rendered to the craft by drawing attention to it.—EDS. B.B.J.]

FOUL BROOD AND FOUNDATION.

[3760.] Even with beeswax from hives affected with foul brood the risk is *nil*, provided the wax is treated as all beeswax should be before being made into foundation. In answer to your correspondent, J. Pearman (3751, page 342), it must appear somewhat like an advertisement on my part, but to correct any false impression regarding present-day foundations it should be admissible for me to reply. With regard to the products got from the old process of dipping, as now practised by some, science points to the fact that there must be some risk, if not a safe medium for the transmission of foul brood.

In your extract from *Gleanings*, on p. 342, it is not in evidence how sterilisation is secured, nor is it reasonable to expect that it will be given, but it will be interesting to know that there are manufacturers ready to give full guarantee that their products are immune from the arch enemy, foul brood. In the interest of the craft, I therefore ask bee-keepers to send along their "F. B." beeswax, notifying its source, and we will return it in foundation, in which it is guaranteed that foul brood germs no longer exist.—JOHN H. HOWARD, *The "British Weed" Factory, Holme, Peterborough.*

THE "GROCERIES" EXHIBITION

AT THE AGRICULTURAL HALL.

[3761.] As I shall be in charge of the honey department at the "Groceries" Exhibition at the Agricultural Hall, will you allow me to call the attention of intending exhibitors to Condition 5 on schedule, according to which exhibits for staging in each class must be packed separately.

This is an excellent idea on the part of the directors, and one that I hope will ere long be adopted at all honey shows.

I might also say that if bee-keepers have anything interesting they will lend (not for competition), I shall be very pleased if they will communicate with me at once.—WM. HERROD, Expert B.B.K.A., *Horticultural College, Swanley, Kent, September* 9.

A SWARM IN SEPTEMBER.

[3762.] On Sunday, the 3rd inst., I had a small swarm of bees (about 2 lb. in weight). The bees were first seen in air over my hives and settled in small larch-fir tree about 5 ft. from ground close to hives. Being away from home at the time I was sent for, and after hiving the swarm I examined two hives that I considered most likely to swarm, but they didn't issue from either of them. I said "most likely," because from one I saw a couple of drones issue in the morning. However, on examining, I found the three drones I had seen and a young queen all right. In the other one there was a young queen and bees on eight combs. I united the swarm to the colony where I had seen drones flying, not knowing what else to do with them, but the bees won't have the swarm at all and are clearing them out. Is not this very late for a swarm to come off [very late.—EDS.], or do you know of any later? They are the ordinary bees we have about here. The one sent is a fair sample, and the black one I suppose is the true English bee. I found two of these on the ground near hive but alive, but these may have been trying to rob and so got injured. Why I send these bees is because I have sent for black queens and bought stocks of black bees, but the workers are generally of the ordinary colour. The drones, however, are black, so by these I think there must be some black ones somewhere close.

Kindly accept 1s. postal order for the "Bath Bee Case."—G. TRICE, *Guildford, Sept.* 7.

THE "BATH BEE CASE."

[3763.] Enclosed please find 2s. 6d. subscription to the "Bath Bee Case Fund." I was very indignant on reading particulars of the case, but, of course, under fear of penalties one must keep his feelings to himself and, like the parrot, "think a lot."

Trusting you will be successful in collecting enough money to fully discharge the defendant's loss.—FREDERICK H. TAYLOR, *Old Hall-lane, Fallowfield.*

[We have received a few other donations to above since first list appeared, but reserve publication till later on. Those who purposed subscribing to the fund will oblige by sending on names, &c., in order to close the list with as little delay as possible.—EDS.]

(*Correspondence continued on page* 364)

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

The substantial and picturesque house apiary depicted in the illustration below belongs to Mr. J. Castleman Brown, and is situate at Arnold Hill, Leeds, near Maidstone, Kent. Though not a very large bee-house it comfortably accommodates some sixteen hives, the entrances to which, as seen in photo, are in

tiers one above the other. Although our limited space does not admit all the hives in the picture it is seen that, although a few skeps are still kept, the bulk of the bees are in frame-hives.

Mr. Brown is an active member of the Kent and Sussex B.K.A., and fills the post of local hon. secretary for the district, in which capacity he has rendered useful help in advancing the interest of the Association and of bee-keeping generally.

In response to a request for some information as to his bee experiences, he writes :—"I am afraid I have not much of interest to communicate, but I began bee-keeping many years ago through reading about bees in one of our gardening journals, starting with one stock in a skep when I had reached the mature age of about ten years. I kept my bees in skeps for many years, but on the frame-hive and the modern system of bee-keeping coming to the front, I was rash enough to begin making box-hives for my own use without any frames, with results that may be imagined. Then, after hearing of the advantages of frame-hives, I started off into frame-making with no particular or uniform size of frame, so that I went through a world of trouble through my impetuosity, and not 'making haste slowly.' I had at this time many failures in consequence, but thanks to the experience since gained all this has changed. The courteous and explicit way in which simple as well as complex questions are answered and advice given in the B.B.J. and *Record* becomes so helpful to readers as to make bee-keeping a real pleasure, and afford a pleasant relief to the ordinary cares of business. At least I have found it so in the past.

"The bee-house in photo was built by myself so long ago as 1864 ; it is therefore thirty-five years old and still sound. It is double-walled, reed-thatched, and altogether I find it a most handy place for its purpose. The positions of the sixteen hives it is made to contain may be gathered from the respective entrances, each of which has its own porch painted alternately of light and dark colours to assist young queens in getting home after mating.

MR J. CASTLEMAN BROWN'S APIARY, ARNOLD HILL, LEEDS, KENT.

"During all these years at the craft I have maintained all through my life that undefinable feeling of pleasure in "the industrious little labourer, the honey-bee," that all true bee-men feel. In my early days—owing mainly to the causes I have already mentioned—it cannot be said that my management (?) was very conducive to profit, but now, with good appliances and expert advice so easily obtainable, bee-keeping bears a far more roseate hue than it formerly did.

"It is always interesting, when friends call, to show them the bees at work, and with this end in view I intend to try my hand at making an observatory hive suitable for the purpose of

showing them the wonders of the bee-hive and its inmates in full operation.

"One little matter I would like to mention is my strong view as to the necessity for thoroughly cleansing old hives—in which bees have died—before using them again for swarms. I consider this precaution one of the greatest safeguards against the spread of foul-brood and one that should be rigidly carried out by all who keep bees."

Few will dispute the soundness of our friend's advice, which it behoves all bee-keepers to follow.

CORRESPONDENCE.

(*Continued from page* 362.)

BEES AND JAM FACTORIES.

[3764.] In your last week's issue of B.B.J. I notice the questions of "A. L. D." and the replies thereto, on page 356. As I am also interested in this matter, as are no doubt all bee-keepers round this neighbourhood, I should feel much obliged if you would kindly give a little more information on the subject. There is a jam factory about one mile distant fror where "A. L. D." (who is at present away) and other bee-keepers live, including myself, but (1) do you mean by your reply that the bees have by some means got at the actual jam, or possibly the part of the jam which is thrown away in the course of manufacture?

2. If so, why do bees not attack ripe fruit while it is still on the trees? Would the sugar used in the manufacturing of the jam explain their partiality to the cooked rather than the raw fruit?

3. If it is really gathered from the jam can it be called honey? If not, I think bee-keepers round this neighbourhood might as well give up bee-keeping, as I am acquainted with others whose bees do this same "jam gathering."

4. I notice you do not give your opinion as to the fitness of the honey for table use (query 2). Perhaps you would kindly do so?—DYRNEH, *Heaton Moor.*

[1. We cannot pretend to say with any certainty how the bees got the so-called "honey" mentioned by "A. L. D." on page 356. We had no intimation of there being a jam factory within reach, and it was only experience that made us judge as we did. Only those on the spot can tell whether "refuse" or "real jam" was carried off by the bees. 2. No doubt it is the sugar used in jam-making that causes bees to carry it off in the manner stated. 3. It would require a considerable stretch of the imagination to honestly call the product of the "jam gathering" honey. 4. The fitness of the honey (?) for table use is simply a matter of taste. It is no doubt perfectly wholesome, and will do no one any harm, but many would not care to eat it, and it is not honey.—EDS.]

Queries and Replies.

[2271.] *Transferring Bees in Autumn.*—1. I have three colonies of bees in frame-hives, each lot being on ten frames. One stock has a '98 queen, the other two being headed by queens of this year. I have also two stocks with queens of '98 hived in common butter-boxes, and two similar boxes in each of which is a second swarm or "cast" of this year. The four last-named stocks stand about 3 ft. apart, and I would like to drive the bees from them, and after joining two lots together get each of the united lots into a frame-hive. I therefore ask (1) is this the right time of year to operate by transferring the bees and letting them build out combs from sheets of foundation? (2) Or would it be better to take two or three combs of honey from each of the first-named three established stocks, put half of these combs into a frame-hive, and, after filling up with full sheets of foundation, put one doubled lot of bees into each? Whichever plan is advised by you will be followed, and I would place the new hives midway between where the butter-box hives now stand. 3. I have three "casts"—which I united—working in two boxes, one a foot square, the other 10 in. The smaller box is placed above the larger one, which lattter has a hole in the top; could I remove the top box by placing a super-clearer between the two boxes? Another question: One of my stocks in a frame-hive has some drones yet in it. 4. Is it usual for drones to be found in new swarms so late in the year as this? I should also tell you that a fortnight ago the other bees made an attempt to rob this hive about 8 a.m., so I placed a square of glass in front of entrance, after reducing its width, and laid a piece of rag moistened with carbolic on the glass. This, I am glad to say, stopped the robbers, but I would like to know what caused the bees to attack that hive? 5. Is it safe to send sections by parcels post from here to Scotland if packed in a wooden box. 6. If there is a Cambs B.K.A., can you tell me who is the Secretary?—W. C., *Borough Green, Newmarket.*

REPLY.—1 and 2. We advise the latter, or No. 2 plan, because it is now too late in the year to get combs built out from foundation. If each hive can be provided with three combs of sealed food, and a full sheet of foundation is inserted on each side of the central frame, it will make five frames in all, and by crowding the bees on to these, and feeding regularly, they will no doubt be able to build out two good new combs before the weather gets very cold. We are assuming that you know how to drive and unite the bees as per instruction given in "Guide Book. And you must take care to preserve the queens of '99 when uniting. 3. Yes, this will be quite a simple operation. 4. No, and we should suspect that

the hive is queenless, especially after the attempt at robbing. 5. By no means safe; indeed, the chances are that the sections would be smashed in post. 6. Mr. C. N. White, St. Neots, is Hon. Sec. of the Cambs B.K.A.

[2272] *Home-made Comb Foundation.*—I shall feel thankful for an answer to the following in the B.B.J. 1. What is the smallest quantity of wax that may be manufactured into comb foundation at any one time? 2. Are full instructions supplied with foundation-making machines by the seller? 3. In making a solar wax extractor, will ordinary window glass suit the purpose, and what substance would you recommend?—VANITY, *Co. Carlow, August* 6.

REPLY.—1. If the appliance known as the "Reitsch" press is used, any weight of wax may be used, from 1 lb. upwards. By the ordinary or "dipping" process, however, it needs at least 20 lb. of wax to get a start; besides, other things necessary make this process unsuitable for home work. 2. Yes. 3. What is known as 21 oz. window glass will do very well.

[2273.] *A Beginner's Attempt at Transferring.*—Early in June last I purchased a swarm of bees, and hived them into a common straw skep. This was my first attempt at handling bees, but they seemed to go right to work in earnest. I afterwards purchased a wood hive, and, being desirous of getting the bees into it, I have tried several times to transfer them; but they fairly beat all my trials at the job. Some time ago I was advised to chloroform the bees so as to get them under control, and to do this I cut a hole in the side of a wooden pail and then lifted the skep on to the pail, leaving the entrance free. The idea was to insert a chloroformed rag into the pail by the plug-hole I made, and when the bees had dropped down into the pail, stupefied from its effects, I could get them into the frame-hive. But when I had got thus far I was advised by another friend not to try the chloroform plan if I did not wish to make a mess of the job; and so, between my friends' advice and my own hesitation, nothing was done. The skep, however, was left standing on the pail, and the bees went on working as merrily as ever. A few weeks ago, however, I pulled out the plug (which had got stuck quite fast), and then saw that the pail was built full up with honeycombs; on lifting the pail I find it is quite heavy. I therefore ask, will you or some bee friend advise me what to do with them, as I would certainly like to get some of the honey if I could?—OHIO, *Barnstaple, September* 4.

REPLY.—We expect many readers will smile on reading of "Ohio's" first attempt at bee-keeping and sympathise with him in the novel predicament his inexperience has led to. We see no prospect of rendering efficient help by printing brief instructions in this column. It needs some bee-keeper to go and do the job for him, and if any reader will volunteer we will give full address on receipt of post-card. For the rest, we must tell our correspondent that to keep bees with any hope of success he must read something about their management in a book written to convey the necessary information. We make no claim to *teach* bee-keeping in our reply column.

[2274.] *Hive Queenless after Swarming.*—I have been a reader of the BEE JOURNAL for some time, and have learned much about the busy bee from its pages, but I would like a little on the following:—About twelve months ago I drove two skeps of bees for a friend and after putting them in a frame-hive gave the bees 24 lb. sugar for winter. In April last I gave them a cake of candy. I also gave them a pint of syrup food on May 16, and on June 29 the bees looked like swarming. I, therefore, examined the combs and found they were full up with brood and honey, so I put in two more frames filled with brood foundation and then put a rack of sections on top, but on July 4 the bees swarmed, and a very strong swarm it was. I had a look in at the section-rack a week later and it seemed to be full of bees. I may also say that when putting the sections I saw four frames below beautifully filled with honey and sealed over. On examining the hive, however, on August 22, to my great surprise there was neither honey nor bees in the sections. On seeing this I overhauled the brood-chamber, feeling sure of securing the four frames that were filled and sealed, but to my astonishment they were half empty. Each frame contained about the same quantity of honey, but there was only a little brood scattered about on one comb. I could not see the queen but the hive appeared to have about three drones to every worker bee. And this makes me ask:—1. Where is the queen, or what is the matter with her? 2. What has become of the honey? I did not perceive any fighting or robbing going on. Would the drones consume the honey faster than the workers gathered it? 3. How can I get rid of the numerous drones? I thought of lifting them, frames and all, into a spare body-box; then, when settled down, put queen-excluder under and let the workers back into the hive and feed them up and requeen the stock. Would that answer?—T. R., *Newton Regis.*

REPLY.—1. It is about certain that the hive is queenless—some accident having befallen the young queen—and that the few cells seen will contain only dead brood left by the old queen. 2. The honey has been consumed by the bees, being a case of "all outgo and no income," through no brood being reared after the issue of swarm. 3. It is of little use re-queening the stock, as after the drones are got rid of so few bees will remain as to make it a waste of time to try and build up a stock from them for wintering safely. As a matter of fact, the queenless colony is of no value owing to the sparseness of worker bees now in it.

Echoes from the Hives.

Norwood, London, S.E., September 6.—The season here has been a fair though very late one. It was not until July 6 that any stores of importance came in, for the sun had scorched up all bee-forage in the parks and open spaces, and the drought (lasting for about three months) had played such havoc with the hives that all hope had about gone. However, after that date a few storms of rain put a new aspect on vegetation, and our stocks being strong and anxious for work, we had a glorious flow for about fourteen days. I am therefore glad to report a total "take" of one hundred and fifty sections, besides 60 lb. of extracted honey; we have also almost doubled the number of our stocks by dividing.—Two Bee Blossoms.

METEOROLOGICAL

Observations taken at Duddington, Stamford, Northants, for the Week ending September 9, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.
Sept. 3....	29·99	61·2	73	46	27	58·9	—
,, 4....	30·06	67·0	80	47	33	62·7	—
,, 5....	29·92	70·0	86	52	34	68·2	·22
,, 6....	29·99	62·0	70	60	10	64·8	·75
,, 7....	29·99	61·0	66	59	7	62·3	1·09
,, 8....	29·96	61·5	71	57	14	63·7	—
,, 9....	30·13	59·3	66	51	15	58·1	—
Means	30 01	63·1	73·1	53·1	20·0	62·7	2·06*

* Total, 2 06 In.

Mean vapour tension, 0·451 in.; mean relative humidity, 78 per cent.; mean temp. of the dew point, 55°·6. The week's rainfall, viz., 2·06 in., = 46,603·38 gallons, or 208·06 tons to the acre, or 10·30 lb. to the square foot. The rainfall on the 7th, viz., 1·09 in., = 24,659·07 gallons, or 110·09 tons to the acre, or 5·45 lb. to the square foot. For the week ending September 2, the mean temp., viz., 61°·6, was +2°·6, and the rainfall, viz., ·26 in., −·27 in. The rainfall, January 1 to September 2, viz., 11·97 in., is −4·14 in.

The month's rainfall = 19,003·32 gallons, or 84 84 tons to the acre, or 4·20 lb. to the square foot.

The month's rainfall is −1·40 in., and that for the year, is − 3·92 in.

Fred. Coventry.

Duddington, Stamford, September 11.

Bee Shows to Come.

September 25 to October 21, at St. James' Hall, Manchester. Show of British honey, honey-vinegar, and mead, under the auspices of the Lancashire Bee-keepers' Association, at the third British and Colonial Industrial Exhibition. Liberal money prizes. Schedules from Fredk. H. Taylor, Hon. Sec. Lancashire B.K.A., Old Hall-lane, Fallowfield, Manchester, or from Albert P. Baker, general manager B. and C.I.E., St. James' Hall, Manchester. **Entries close, September 21.** (See Advt. on p. iii.).

September 30, at Jedburgh.—Annual Show of the Roxburghshire B.K.A., in the Church Hall, Queen-street. Twenty-five classes for honey, &c. Schedules from Thos. Clark, Secretary, Pleasants, Jedburgh, N.B. **Entries close September 26.**

September 30 to October 7 at the Agricultural Hall, London.—Honey Show in connection with the fourth Annual Exhibition of the Grocery and Kindred Trades. Classes (open to master grocers only) for comb-honey in sections and for extracted honey. (See advertisement on page v.) **Entries close September 16.**

October 17 to 20 at the Agricultural Hall, London.—Show of Honey and Bee-produce in connection with the British Dairy Farmers' Association. Numerous and liberal prizes for honey, &c.—Schedules from Mr. E. Young, Secretary, 12, Hanover-square, London, W. (See advertisement on page 358.) **Entries close September 18.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

A. D. (Parracombe).—*Zinc for Honey Strainer.*—We should on no account use zinc for the purpose named, seeing that the acid in honey will set up oxidation, and we know what oxide of zinc means in food. Tin of good quality should be used for all receptacles made to contain honey where glass or earthenware is unsuitable.

M. J. S. (London).—*Suspected Comb.*—There is no foul brood in combs, but their mouldy condition makes them only fit for the melting-pot.

H. P. (Kingsbridge).—There are slight signs of foul brood in comb. It seems a mild case.

County Council Lecturer on Apiculture.—*Foul Brood and Foundation.*—1. We are pleased to have your personal testimony that comb foundation cannot be a factor in conveying foul brood to hives in which it is used, though without some knowledge of the experiments which have enabled you to arrive at this conclusion it is, of course, impossible to estimate their value. 2. It will also be well to defer publishing anything about your alleged successful treatment of foul brood till its efficacy has been proved beyond doubt.

G. W. Perry (Yeovil).—*Stimulative Feeding.*—1. You will find no directions in Cowan's "Guide Book" for adding pea-flour to syrup when preparing bee-food. Pea-flour is only used in making candy. 2. The flour will not injure the bees, but it is worse than useless at this season. 3. The cheapest rapid-feeder is a wide-mouthed glass jam-jar holding about two quarts of syrup, and costing 4d.

J. W. Cooling (Dogdyke, Lincs.).—*Growing Sainfoin for Bee-pasturage.* — Sainfoin, being one of the heavy forage plants, is sown as is red clover grown for hay. Sainfoin, however, succeeds only on chalky soils. The bulk of the crop is cut as green forage for cattle, similarly to vetches.

J. Quartermain (Tenby).—*Press Cuttings.*—1. Much obliged for cuttings sent. They might be interesting reading, but hardly suitable for our columns in the interest of British bee-keeping. 2. A "swarm catcher" that requires to be "placed at the hive

entrance the moment the bees begin to swarm," as stated, would, we think, be of no service to bee-keepers in this country.

JAS. ELRICK (Fetterangus).—*Variety of Bees.*—Bees sent are of the common, or native, variety, with just the tinge of foreign marking on the abdomen found on nearly all the bees of this country.

R. DUTTON (Witham).—There is no cause for alarm. It is nothing worse than chilled brood.

C. G. (Swindon).—*Honey Samples.*—1. Honey received is good, the flavour of lime being perceptible. Worse honeys have taken prizes at shows, but its chance of winning depends, of course, on what is staged against it. 2. Queen was dead when received, as was only to be expected after travelling alone without food. The comb sent shows that foul brood is developing in the hive, so that in no case would we have made any use of the queen by giving her away for introduction into another hive.

J. E. S. (Cornwall).—*Dealing with Foul Brood.*—1. Although bees are hatching out freely in comb sent we find traces of foul brood of very old standing in a few cells. No doubt the preventives used have kept the mischief considerably under control. 2. The course you propose to follow will no doubt assist very much in affecting a cure. 3. We found only spores in comb sent. 4. Use the remedies prescribed in "Guide Book." 5. In uniting a driven lot to the stock, remove the undesirable queen twenty-four hours beforehand.

J. T. ABRAHAM (Enniskillen).—We found no disease in comb sent.

H. W. (Southampton).—Foul brood is developing rapidly in comb sent.

SUNSHINE (Birmingham). — *Granulating Honey.*—We know of no artificial method of causing honey to granulate.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

FEW DOZEN good SECTIONS FOR SALE, 7s. 6d. doz. AVERY, Ripley, Surrey. 464

HEALTHY DRIVEN BEES at 1s. 3d. per lb.; not less than 4 lb. in each lot, with Queen. Boxes to be returned. E. LONG, Fulbourne, Cambs. 467

NINE DOZEN good SECTIONS; also 70 lb. EXTRACTED HONEY. Bulk, 7s. dozen on rail. WILL PETHER, Assenden, Henley-on-Thames. 466

OVERSTOCKED.—Ten Strong Healthy STOCKS FOR SALE on frames, 15s. each. AVERY, Ripley, Surrey. 465

PURE ENGLISH HONEY, 5d. and 6½d. lb.; sample, 2d. Two strong STOCKS in Skeps, 11s. each. Cash or deposit. COE, Ridgwell, Halstead, Essex. 460

WANTED, Six STRAW SKEPS, with Bees, Combs, and Honey; healthy, and safe arrival guaranteed. CLARK, Birkby, Maryport, Cumberland. 459

FOR SALE, Two new HIVES on legs, with ten ready-built Combs, suitable for Driven Bees; 12s. 6d., or offers. BEAMAN, Tenbury, Worcestershire. 461

Prepaid Advertisements (*Continued*).

EXTRACTED HONEY, 50s. cwt., tins free; samples, 3d. SALMON, Parkend, Stonehouse, Gloucestershire. 458

HONEY.—FOR SALE, large quantity of splendid EXTRACTED HONEY, sample 2d.; also good 1-lb. SECTIONS. GEO. CROMBIE, Hotham, East Yorks. 457

WANTED, Two Tons of light Extracted English HONEY. Samples to LEENEY, Honey Merchant, Hove, Sussex. 455

LANTERN SLIDES on BEES and BEE CULTURE. List post free from EXPERT, Brant Broughton, Newark.

23RD YEAR.—RE-QUEEN NOW.—Small SWARMS, with reliable Queens, 5s. 6d., package free; '99 QUEENS, delivered 3s. 9d. For other requirements apply, ALSFORD, Expert, Blandford. 454

FOR SALE, Six strong STOCKS BEES on ten standard frames, good hives, medicated stores for winter, with supers, 25s. each, on rail. £6 the lot. J. BEAMAN, Tenbury.

FOR SALE, One 40-lb. tin pure CLOVER HONEY; also Two strong STOCKS of BEES in bar-framed hives complete, good as new. NEWALL, Blue Cap Cottage, Sandiway, Northwich. 470

LARGE size EXTRACTOR FOR SALE, with reversible cages, wired both sides, strainer, chain gearing, very strong, and holds about 100 lb. A bargain! 35s. on approval. J. BEAMAN, Tenbury, Worcestershire. 462

GUARANTEED HEALTHY DRIVEN BEES, with Fertile Queen, 1s. 3d. lb. QUEENS, 2s. each. Strong healthy STOCKS in Skeps, about 30 lb. each, 12s. 6d. WOODS, Normandy, Guildford. 456

FOR SALE (any amount), EXTRACTED HONEY and 1-lb. SECTIONS, both good quality, fit to stage anywhere, have won in open classes with 26 entries. Best offers. DAVIES, Myrddin Apiary, Abergwili. 468

WANTED, BEES in Frame Hives in Exchange for HARP partly strung, splendid tone, value Three Guineas, and Oberthur's Harp Instruction Book. C. IRWIN, 130, Emscote-road, Warwick. 463

BEE JOURNAL, Oct. 15th, 1885, to Jan. 13th, 1887; also Aug. 13th, 1891, to Nov. 5th 1896; perfect condition. What cash offers? CHAPMAN, Elm Grove, Taunton. 469

STRONG three-frame Nuclei 1899, tested QUEENS, 10s. 6d. each. Guaranteed healthy. Packages to be returned. Fine tested 1899 Queens, 3s. 6d. each. Safe arrival guaranteed. WHITING, Valley Apiaries, Hundon, Clare, Suffolk. 471

EXTRACTED HONEY, 50s. cwt.; tins extra; returnable; sample, 3d. APIARIST, Dyke, Bourne.

SECTIONS, 7s. doz. best quality. LING, Shady Camp, Linton, Cambs. 434

HONEY LABELS, new design, including name and address, 1,000, 7s. 6d.; 500, 4s. 6d. GUEST, King's Norton. 417

PROLIFIC QUEENS, Nuclei, Stocks (Skeps and Frame Hives), and Swarms. E. WOODHAM, Clavering, Newport, Essex. 447

ENGLISH MADE HONEY JARS (1-lb. screw-cap), 14s. per gross; sample, 6d. JAS. DYSON, Stainforth, Doncaster. F.N.

"W.B.C." HIVES.—Make your own at third the cost. For particulars, send stamped addressed envelope. PRIDEAUX, Whitchurch, Salop. 302

QUEENS, STOCKS, NUCLEI, and SWARMS. A few more orders can be accepted. List free. Rev. C. BRERETON, Pulborough, Sussex.

23RD YEAR.—For Young Fertile Queens and Driven Bees, apply, W. W. PRYOR, Breachwood Green, Welwyn.

Prepaid Advertisements (*Continued*)

FIRST-CLASS SECTIONS, 9s. per dozen, or offers; also Extracted HONEY in 1-lb. bottles, nicely labelled. Reduction on quantity. Miss E. A. FISHER, Heathend Farm, Loudwater, Bucks. 448

NEW HONEY.—WANTED, 1-lb. SECTIONS, clean, not dark, well-filled, and sealed. Any quantity. State lowest price for cash. M. CHARLTON, 42, Fawcett-street, Sunderland. 415

COMFORTABLE APARTMENTS for Brother Bee-keepers visiting Douglas. HORSLEY, Merridale House, Empire-terrace, Top of Castle Drive, Isle of Man. 432

FURTHER REDUCTIONS. TRANSPARENT CELLULOID QUILTS, post free, 1s. 6d.; CELLULOID QUEEN EXCLUDERS, post free, 1s. 6d. R. H. COLTMAN, Bee-Appliance Maker, Burton-on-Trent.

BRICE'S RELIABLE QUEENS. Well-known strain, one quality, one price. Mated tested Queen, 5s. 6d., post free in perfected travelling and introducing cage. Safe arrival guaranteed. HENRY W. BRICE, 100, Brigstock-road, Thornton Heath.

HEALTHY DRIVEN BEES at 1s. 3d. per lb., not less than 4-lb. lots with queen. Boxes returnable; also young Fertile Queens at 1s. 6d.; post free; ninth season. R. BROWN, Flora Apiary, Somersham, Hunts. 380

CHOICE Young BLACK QUEENS. Natural raised, tested, and safe arrival guaranteed, 2s. 6d. each, post free. Also a few lots of Driven Bees at 1s. 3d. per lb., in 4 or 5 lb. lots, with Queen. Boxes to be returned carriage paid. A. J. CARTER, Newfields, Billingshurst, Sussex.

LACE PAPER for SECTION GLAZING (something new), in white, pale green, and pink; 1 in. wide. 100 strips, 7d.; 200, 1s. 2d.; 300, 1s. 6d.; 500, 2s. 3d.; 1,000, 4s. Also LACE BANDS (lace edge both sides), 2⅞ and 3⅛ in. wide. White: 100, 1s. 3d.; 200, 2s. 3d.; 300, 3s.; 500, 4s. 9d. Pink and Pale Green: 100, 1s. 6d.; 200, 2s. 9d.; 300, 4s.; 500, 5s. 6d. (Samples of each kind and colour, 3d.) All post free. W. WOODLEY, Beedon, Newbury.

DAIRY SHOW,
LONDON,
October 17, 18, 19, and 20.
LIBERAL PRIZES FOR HONEY, &c.
Reduced Fees to Members of B.B.K.A. or Affiliated Societies.
ENTRIES CLOSE SEPTEMBER 18th.
Wm. C. YOUNG, *Sec.* **12, Hanover Sq. London, W.**

J. S. GREENHILL,
(27 years with Messrs. G. Neighbour & Son)
Manufacturer of up-to-date
HIVES AND BEE APPLIANCES OF EVERY KIND,
80, Graham Road, Wimbledon.
Illustrated Catalogue Post Free.

The Messrs. ROOT, of Medina, while thanking customers for their patronage, express regret for the unusual delay in ocean transit of Goods during the past season, and, to prevent a recurrence of same incident on Spring Shipments, would be pleased by having all Orders sent in this month (September).
They have a LARGE STOCK of BEST **WHITEWOOD LUMBER** ready for immediate manufacture.

WM. BOXWELL,
Patrickswell, co. Limerick.
(Wholesale Agent for the A. I. ROOT CO., Medina, Ohio.)

Notice.—
ERNEST W. GODDARD & CO.
THE MODEL APIARY,
Wash Road, NEWBURY; and New Farm, Cold Ash, BUCKLEBURY.
Manufacturer of all kinds of Bee Appliances.
HIVES and QUEENS a Speciality!
Best Centre for South and West of England.
NOTE.—2d. per lb. off Super and Brood Comb to clear.
FRAMES, 6s. per 100. *Send for his Catalogue post free.* N.B.—Inspection of his Apiaries invited.
Any Quantity of good Sections bought.

ARTHUR T. PROCTOR,
LEICESTER-ROAD, GREAT WIGSTON, near LEICESTER.
(Five years with Chas. Redshaw).
STOCKS! SWARMS and QUEENS a Speciality! STRAW SKEPS, from 1s. 6d. SMOKERS, from 2s. GLASS for 1 lb. Sections, 4¼ by 4¼, 2s. 6d. gross. "W.B.C." TIN ENDS, equal to any in the trade, and better than most, 3s. 6d. gross. PARCHMENT (in squares), first quality, 1s. 1b.
All other Requisites at equally low prices.
N.B.—All goods to the value of 5s. and upwards, Carriage paid. Prompt delivery of all orders.

SLADEN'S
HARDY and PROLIFIC STRAIN of BEES, raised and tested in RIPPLE COURT APIARY. All stocks are supplied on wired-in combs.
SLADEN'S "ROYAL MAIDSTONE" PRIZE HIVE.
Made on the "W.B.C." plan, but without plinths. Prize winner at the "Royal" Show, Maidstone, 1899.
PLANTS and SEEDS for BEES.
A Speciality is made of Early Spring Flowering Honey Plants. A list of these will be sent free on application.
Besides the above special articles, all BEE-KEEPING APPLIANCES are made and kept, and Supplied Promptly at moderate prices.
N.B.—All Goods are of BEST QUALITY only, and will now be sent CARRIAGE PAID to any address.
F. SLADEN, Ripple Court Apiary, nr. **DOVER.**

J. H. HOWARD, HOLME, Near Peterboro.
This is the "Head Centre" for FOUNDATIONS, and the only Factory in Great Britain making "WEED" FOUNDATIONS.
Customers' Bees-Wax made up by the "Weed" Process.
We give Best Prices for British Beeswax. Submit Samples, please.
CATALOGUES FREE ON RECEIPT OF ADDRESS.

Editorial, Notices, &c.

DERBYSHIRE B.K.A.

ANNUAL SHOW.

The eighteenth annual show of hives, bees, and honey was held in connection with that of the Derbyshire Agricultural Society at the Cattle Market, Derby, on September 13 and 14. The bee-keepers' section of the exhibition was held in a commodious tent in the implement yard; and, the entries this year being greatly in excess of last year, a larger tent was requisitioned to accommodate the increased display. Mr. F. Walker, the zealous hon. sec. of the D.B.K.A., had laboured assiduously to ensure the success of his department, and the result was very gratifying to all concerned, for the exhibits were capitally staged. Mr. Walker himself had a novel and interesting exhibit showing the various uses to which the products of bees may be applied. This exhibit took first prize in its class.

Mr. Peter Scattergood, Stapleford, Notts, was the appointed judge, and was assisted in the open classes by Mr. T. W. Jones, Etwall.

The following are their awards :—

MEMBERS' CLASSES.

Observatory Hive with Bees and Queen (one frame only).—1st, J. Pearman ; 2nd, T. Richards.

Observatory Hive with Bees and Queen (two or more frames).—1st, T. Richards ; 2nd, J. Pearman ; 3rd, F. Walker.

Display of Honey (not over 120 lb.).—1st, J. H. Varty ; 2nd, T. Richards ; 3rd, J. Stone ; 4th, T. W. Jones and R. H. Coltman equal.

Twelve 1-lb. Sections.—1st, J. Pearman ; 2nd, J. H. Varty ; 3rd, J. Stone ; 4th, R. H. Coltman.

Twelve 1-lb. Jars Extracted Honey (light).—1st, J. R. Bridges ; 2nd, J. Pearman ; 3rd, T. W. Jones ; 4th, S. Durose.

Twelve 1-lb. Jars Extracted Honey (dark).—1st, J. Stone ; 2nd, L. Hill ; 3rd, J. Sharratt.

Display of Bee Products (including Wax, Honey Vinegar, Mead, &c.).—1st, F. Walker ; 2nd, J. Pearman ; 3rd, H. Hill.

Beeswax.—1st, G. Thornhill ; 2nd, J. Pearman ; 3rd, H. Meakin ; 4th, J. Stone.

Extracted Honey, not over 20 lb. (Labourers only).—1st, J. Pearman ; 2nd, F. Howard ; 3rd, G. Thornhill.

OPEN CLASSES.

Twelve 1-lb. Sections.—1st, W. Weatherhogg ; 2nd, H. F. Beale ; 3rd, J. Stone.

Twelve 1 lb. Jars Extracted Honey.—1st, A. G. Pugh ; 2nd, H. F. Beale ; 3rd, J. Edwards ; 4th, W. Cooke.

Twelve 1-lb. Jars Granulated Honey.—1st, G. Berry ; 2nd, S. Durose.

Single 1-lb. Section.—1st, G. Metcalf ; 2nd, S. G. Leigh ; 3rd, H. F. Beale.

Single 1-lb. Jar Extracted Honey.—1st, W. Haltiff ; 2nd, H. F. Beale ; 3rd, T. Blake.

Six 1-lb. Sections.—1st, J. Stone ; 2nd, S. Durose ; 3rd, J. Pearman.

Six 1-lb. Jars Extracted Honey.—1st, J. Pearman ; 2nd, S. Durose ; 3rd, J. Stone.

Collection of Bee Appliances.—1st, G. H. Varty ; 2nd, R. H. Coltman.—(*Communicated*).

HEREFORDSHIRE B.K.A.

ANNUAL SHOW AND HONEY FAIR.

The fifteenth annual honey fair, under the auspices of the Herefordshire Bee-keepers Association, was held in the Butter Market, Hereford, on Wednesday, September 6, and the results of the exhibition were very gratifying to both promoters and exhibitors. The fair was considerably larger than has been known for several years, and it was estimated that about 25 cwt. of honey was on view. The quality all round was excellent—far superior to last year, which was an unfavourable one—although the season has varied considerably. The judges were Mr. E. J. Burtt, Gloucester, and Mr. J. Palmer, Ludlow, while the onerous secretarial duties were well discharged by Mr. Alfred Watkins, hon. sec., Hereford B.K.A. A considerable quantity of honey was sold, the best quality run honey realising 6d. to 9d. per lb. in bulk ; jars, 10d. to 1s. each.

AWARDS.

Exhibit of Honey, not exceeding 100 lb.—1st, J. Meadham, Huntington ; 2nd, W. Williams, Canon Froome ; 3rd, W. Tompkins, Burghill ; h.c., G. Griffiths.

Exhibit of Honey, not exceeding 50 lb. (novices).—1st, C. Edwards, Almeley ; 2nd, A. Burgoyne, Lyonshall ; h.c., R. Pearce.

Twelve 1-lb. Jars Extracted Honey.—1st, W. J. Spencer ; 2nd, J. Williams, Dolyhir ; 3rd, W. Tompkins ; v.h.c., A. Burgoyne ; h.c., A. Price.

Six 1-lb. Jars Extracted Honey (novices).—1st, Rev. W. Head, Brilley ; 2nd, S. Palmer, Ewias Harold ; 3rd, A. Burgoyne ; v.h.c., W. J. Spencer ; h.c., Miss M. Wootton, Mansell ; c., J. Helme, Norton Canon.

Twelve 1-lb. Sections—1st, C. Edwards ; 2nd, Mrs. Blashill, Bridge Sollars ; 3rd, C. Turner.

Six 1-lb. Sections (novices).—1st, J. Owens, Yazor ; 2nd, J. Helme ; 3rd, W. Williams ; v.h.c., Miss Wootton ; h.c., F. Jones.

Three Shallow Frames of Comb Honey.—1st, C. Edwards ; 2nd, A. Hill.

Exhibit of Honey, not exceeding 12 lb. in 1-lb. Jars or in 1-lb. Sections.—1st, C. Edwards.—(*Communicated*).

HONEY SHOW AT BILDESTON.

In connection with the annual exhibition of the Bildeston (Suffolk) Horticultural Society

on September 8, a show of honey took place, and an excellent display resulted. Not only were the entries more numerous, but the quality of the bee-produce was much superior to any show of late years. The following prizes were awarded :—

Collection of Honey.—1st, F. T. Melton, Bildeston.

Twelve 1-lb. Sections.—1st, R. W. Hill, Bildeston.

Six 1-lb. Sections.—1st, F. T. Melton.

Six 1-lb. Jars Extracted Honey.—1st, F. T. Melton ; 2nd, W. Turner, Brent Eleigh.

Six 1-lb. Sections (amateurs).—1st, R. A. Preece, Hitcham ; 2nd, R. W. Hill.

Six 1-lb. Jars Extracted Honey (amateurs). —1st, R. A. Preece ; 2nd, W. Turner.

Honey in Comb (labourers only).—1st, W. Turner ; 2nd, F. Thorpe, Wallisham.

Six 1-lb. Sections (labourers only).—1st, J. Taylor, Bildeston ; 2nd, W. Turner.—F. G. Hurley, Hon. Sec.—(*Communicated*).

SHOW AT BRIDGNORTH, SALOP.

The annual summer show of the Bridgnorth and District Horticultural Society was held on "The Bylet," a picturesque island in the river Severn, on August 17. In the classes for honey the following awards were made :—

Three 1-lb. Jars Extracted Honey (cottagers).—1st, Thos. Head, Stanmore ; 2nd, J. Rogers, Eardington ; 3rd, Samuel Morgan, Bridgnorth.

Six 1-lb. Sections (amateurs).—1st, E. Williams, Bridgnorth.

A special prize was awarded to an exhibit of honeycomb and run-honey sent by Mr. Edmund Roden, Quatford, near Bridgnorth. A well-filled bell-glass of honey, weighing 36½ lb., the produce of a straw skep of last season's driven bees was also shown by Mr. Roden and attracted much attention.—(*Communicated.*)

THE "BATH BEE CASE."

COMPENSATION FUND.

We have so far received the following donations to the fund for reimbursing Mrs. Pavy for the loss she has sustained in the above case :—

	£	s.	d.
Donations announced on page 350 of B.B.J. for September 7	3	0	6
E. D. T. (Eynsford)	0	5	0
F. H. Taylor (Manchester)... ...	0	2	6
G. Franklin (Kenilworth)	0	2	6
D. Cator (Tooting)...	0	2	0
F. Harper (Uttoxeter)	0	1	6
"A Friend"	0	1	0
C. A. P. (Kerry)	0	1	0

As we purpose closing the list at the end of the present month, intending donors will oblige by sending in names with as little delay as possible.—[EDS.]

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[3765.] The honey season is now over for 1899, and we must turn our attention to preparing for another year. First see that bees have sufficient food for the winter, and where stocks are found short, give the required quantity of food at once. Stocks that have been at the moors and returned laden with the harvest of heather honey should receive prompt attention, as the shake-up will naturally stimulate breeding ; and any that require a renewal of queens should have the young queens introduced as early as possible, so that the colony may have an increase of population before winter weather sets in. If queens are introduced before the winter supply of food is given, the stimulation and extra warmth engendered by feeding will induce late breeding, thus building up the colony ready for the winter and increasing its chance of distinguishing itself another year. Referring to your correspondent, Mr. Leonard Quayle, who has beaten his own previous record, according to his letter on page 354, with such success, Mr. Quayle may expect a goodly number of bee-keepers to locate themselves in the vicinity of Glenmay, to share in the spoils.

Mr. Howard's reply to Mr. Pearman (3760, page 362) is certainly reassuring and will allay the fears of those who, being unable to account for the breaking-out of foul brood in their apiaries, have jumped to the conclusion that *foundation* may be the infecting *media*. I should suppose that wax rendered in the usual way and worked up into foundation, as your querist "Vanity" (2272, page 365) wishes to do last week, will not be safe if the combs are tainted with foul-brood germs before rendering.

I am glad to find the schedule of the "Groceries" requires exhibits in different classes to be sent in a separate case. This is a point I have suggested in my "notes" on more than one occasion, and after considerable experience at honey shows for some twenty years past, I know that it will be a great convenience to those who have charge of the staging and re-packing after the show is over, when every nerve is strained to get the shelves clear.

Packing Honey in Jars for Shows.—I would again ask intending exhibitors at all shows to pack their jars of honey in corrugated paper envelopes. Have the box large enough to take a little hay or packing at bottom and sides, then put the corrugated paper around the jars ; stand them in the box, with a little packing to

fill ; use no paper wrapping round the jars, as this takes time in removal, and if the slightest leakage occurs, paper makes things more "messy." A handful of hay folded in a sheet of paper makes a flat wad, which can be fixed on the inside of lid of box, or a piece of thick felt will be better still.

Sections can be safely packed in a similar manner : have the packing below, around, and on top, for fear of getting the box or case wrong side up. The packing at sides and top may be wads such as I have described above. Nearly all my exhibits are packed in this manner during the season, and I have had very few sections damaged. Spring crates are, of course, very safe and nice, only there is the initial cost and the after expense of return carriage if the exhibits are sold, besides possible loss of same on rail, or neglect to return them by the purchaser of the contents.

The advertisement pages of B.B.J. point to the introduction of a good number of Carniolan and other foreign races of bees into British apiaries. The reduced prices asked, and cheap transit per post, will no doubt prove an inducement to some new hands at the craft to invest in the foreign element. The craze took hold a decade ago, and with the introduction of Carniolan blood another trait not so very desirable was introduced also ; a trait that, I think, tells adversely in honey-production—*i.e.*, excessive swarming. There is also another side to the question, and when bee-keepers are introducing foreign blood into their own apiaries, it is only one remove from their neighbours' apiaries also. Whether these neighbours desire the introduction or not is a moot point, but is this quite fair and just to our neighbours? And not the least objection to hybridising the bees of the neighbourhood is the tendency of hybrids to prove vicious, and thus point with no uncertain indicator to a repetition of "The Bath Case." That case is now recorded in the annals of bee-keeping, and will probably be quoted against the craft on future occasions. But these matters I leave to those who are—like the Athenians of old—always after new things. I would have said more, only I have "English queens" for sale, and it looks like axe-grinding.—W. Woodley, *Beedon, Newbury.*

BEES IN PERTHSHIRE.

A BEGINNER'S EXPERIENCE.

[3766.] I had a stock of bees given me two years ago, but the bees yielded no surplus at all, which was a little discouraging for my first season.

Last year the hive seemed very strong in bees, and a rack of sections was put above the brood-nest. The bees immediately took possession, but did no work in them to speak of. They were watched attentively, but never seen to swarm. At the end of the season there was not 4 oz. of honey in any of the sections on the hive.

I was getting just about tired of bee-keeping, and would have given it up only I had prepared two frame-hives in anticipation of their swarming and did not wish to lose the bees. At the beginning of July, '98, a stray swarm (from somewhere) lodged in one of the chimneys of the schoolhouse here ; I managed, after considerable difficulty, to secure the bees and put them into one of the hives I had made. I also got a second swarm given to me, which utilised the other hive, and I determined to persevere a little longer.

Watching the bees at work in the new hives led me to become interested in them, and the interest once awakened grew and became so absorbing that now I should be very sorry indeed to part with them.

I got some joiners' tools last autumn, and during the winter made a big hive with two divisions, each to hold an inside box of twelve frames. I also made a smaller hive to accommodate twelve frames, besides a number of surplus boxes in readiness for what the season now past might have in store for me. Meanwhile I was beginning to learn more about the bees, and became sanguine of a better return this season. However, my first hive came to grief in the spring ; it was "robbed out." I contracted the entrance on noticing the depredation going on, but it seemed to have little effect. I came to the conclusion that some time during the season of '98 the colony must have lost its queen at a time when the bees had no means of raising another, and so had become weak and easily overcome. There were patches of brood in the combs, but I could see no queen when I examined the dead bees, after the robbers had wrought their will with the honey.

Now, I notice in your reply to "W. J. G. (York)," on page 327 of B.B.J. of August 17, you say, "it is about hopeless to expect surplus honey the same season from a swarm hived so late as July 13 ;" and to "Stanley Towse (Catford)," on page 354 of B.B.J. of September 7, you give reasons for not complying with his suggestion to give an outline of what should be done in the apiary every week or every month.

To show how unsuitable any suggestion that would apply to the above correspondents would be for this district, I thought I should like to write and give you a summary of my work this season, and also ask your advice on one or two points about which I am in doubt. I could not, however, go plump into particulars without beginning at the beginning of my bee-keeping, and I trust you will excuse this long introduction.

Well, in the spring of this year, when the bees began work, I thought my two colonies were shaping well. The bees seemed to be strong and worked hard, almost every bee coming home laden with pollen. They wrought diligently in the early summer. The season was late however, and my first swarm came off on July 13. This I put into one of the

divisions of what I call my big hive. The other stock swarmed on July 17 (a very big swarm). This I put along with the other, giving them ten frames containing seven full and three half sheets of foundation. I syringed the bees with sugar and water and a few drops of essence of peppermint added when I united them, and there was no fighting whatever. I looked in the hive seven days later, and finding the combs fully drawn out I put on a 24-lb. rack of sections, which was at once filled with bees. After a few days the bees began to lie out in front of the entrance, and I put an 18-lb. rack *above* the other (I suppose I should have put it underneath). In a few hours this also was crammed with bees, and in a few days more the sections were well on for being filled, when the bees began again to hang out—the alighting board and the porch above it being entirely covered. I did not know then what to do. I was afraid something had gone wrong with the queen when so many of the bees were not working, but derived consolation from the fact that work was still going steadily on by a continual stream of workers passing in and out, and the upper rack was being filled with honey. So I put another rack of sections above the other two. This relieved matters for a time, as they were soon filled with bees. In a week or two, however, the lying-out began again worse than ever, but by this time I noticed that the sections both in the top and bottom racks were being sealed (I could not see into the middle rack).

I kept them on till August 26, six weeks from the introduction of the second swarm, when I took off 55 lb. of beautiful honey, every section being thoroughly full and sealed over.

The remaining five sections not being completely finished I put them back with a few others, and on Saturday the 9th inst. I took off 10 lb. more splendidly filled and sealed. I thus got 65 lb. of comb honey from the united swarms of July 13 and 17. This is remarkably good, isn't it?

My other hives have not done so well, but still I got honey from them all except one. I have now four frame-hives containing respectively 11, 10, 10, and 8 frames, and would take it as a favour if you would kindly tell me whether I should leave all the frames in the hives during the winter, and particularly what I should do so that the bees may come out strong in the early summer and swarm by the end of June (early for this district). Also, whether you think most honey would be obtained by "tiering" the super boxes and leaving the whole to the end of the season, or putting on only one super box and emptying as the sections are sealed.

I consider bee-keeping—apart from the pecuniary benefit to be derived from it—is one of the most interesting pastimes that can be taken up, and I think that any one who begins and proceeds in a proper spirit, who is anxious to do everything possible for his bees' comfort and welfare at all seasons, who is careful as far as care can be possibly exercised over the life of every individual member of his hive or hives through his love for the busy little inmates, and his unwillingness to hurt one of them, will have a return in pleasure and enjoyment that will well repay all his efforts. I have begun to take the BEE JOURNAL, and enjoy it immensely.—JAMES AITKEN, *Kinlock, Rannach, Perthshire, September* 15.

P.S.—I have also already read Pettigrew's and Webster's books on bees, and will be glad if you will send me Cowan's "Guide Book."

THE LATE-FLOWERING LIME.

TILIA PETIOLARIS.

[3767.] I wrote to a well-known nursery for *Tilia petiolaris*, with the intention of planting a few trees this season, as you urge in your footnote to Mr. Reid's letter on page 361 of last week's issue. They tell me they have *Tilia alba variegata pendula, Tilia argenta variegata pendula*, flowering July-August, said to be natives of the Crimea. Can any reader of the B.B.J. say whether these two varieties flower as late as *T. petiolaris*?—E. D. TILL, *Eynsford, Kent, September* 16.

(*Correspondence continued on page* 374.)

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

The bee-garden pictures seen on next page will, we hope, commend themselves to readers as introducing to our "Homes of the Honey-bee" series a little of that variety which is always considered "charming" (and the pictures *are* charming—at least, we thought them so. But being somewhat unorthodox, as views of an apiary, we may explain that they were not intended for publication; in fact, Mr. Godwin, who is evidently a good amateur photographer, just included them among several snap-shot views of his apiary, with an apologetic note complaining of the difficulty of getting a decent looking photo of his hives, owing to their being set up in various parts of his garden.

The pictures shown were therefore sent to give us a glimpse of our friend's "home" and a couple of its little inhabitants or, maybe as a contrast to the usual arrangement, consisting of a lot of modern bee-hives which some one (not a bee-keeper, of course) has likened to "a collection of either dog-kennels or tombstones." However we chose the pretty little views shown for print and Mr. Godwin in consenting said: "After all, I think you are right; they *do* make the nicest pictures." In response to our usual request he writes:—

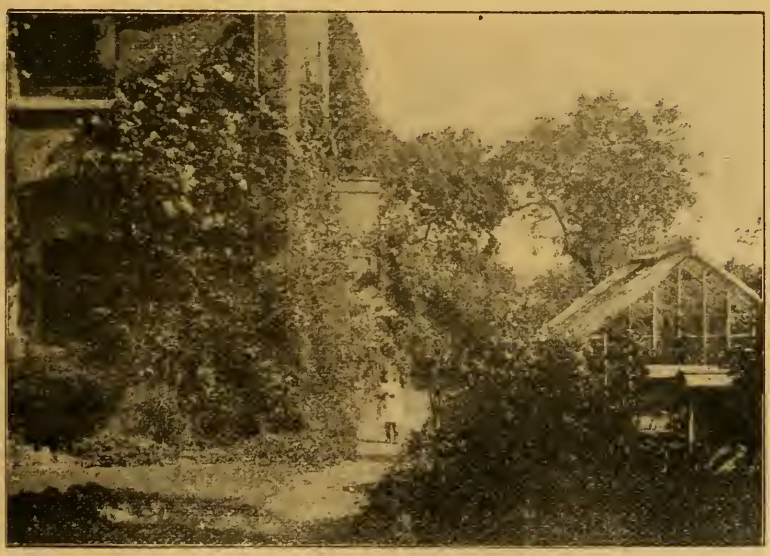
"I was born in the adjoining village of Lugwardine some forty-three years ago, where the greater part of my life has been spent, having moved to my present residence in the

year 1887. My regular occupation is in the chemical department of the Lugwardine Art Tile Works, where I have been employed in various branches of the trade for about thirty-four years.

"Hours of labour being short, ample time has been on hand to follow various hobbies, and though of somewhat feeble constitution, a kindly Providence has endowed me with a fair share of energy and enthusiasm, consequently some amount of skill has been acquired in various pursuits. In earlier life music, photography, electricity, and carpentry were chiefly followed, but in consequence of a change of work (to the chemical branch and its attendant unhealthiness), an outdoor occupation became imperative, so gardening and bees became the order of the day. Bee-keeping is a much younger "hobby" than the others, only dating back to 1894, when I became the trembling possessor of a skep. Having made a frame-hive in accordance with instructions published in *Amateur Work* (from the pen of our worthy friend, Mr. Alfred Watkins), I laid the skep on the top of frames, in the manner so often recommended by our editors, and in due season the bees had transferred themselves below into their more modern dwelling, and since that time I have been fairly 'gone' on bees. Increase has been made from this, two other stocks, and a swarm, mainly by nucleus swarming, until the present, when my apiary numbers fifteen hives.

"Everything in the way of bee literature that came in my way was eagerly perused until proficiency was gained; but my sheet anchor has been Mr. Cowan's 'Guide Book.'

MR. JAS. G. GODWIN'S APIARY, MAYFIELD COTTAGE, WITHINGTON, NEAR HEREFORD.



"From the time of purchasing my first skep of bees, 'Excelsior' has been my motto, and all branches of bee-work have been tackled; queen-rearing, however, has the greatest attraction for me. My hives are (with two exceptions) of home manufacture, and though outwardly of various patterns all take the 'standard frame.'

"The hive I prefer is a square ten-frame one, that can be placed either way on the floor-board. Wood $\frac{5}{8}$ in. thick and dovetailed at corners. Shallow frame supers to hold eight frames, spaced $1\frac{3}{16}$ apart, and not attached to outer case, but capable of piling up, as needed, inside 'lifts.' Section-racks wide enough to entirely cover the brood nest, and thus work under, over, or between two frame supers if necessary. I attain this end by inserting a $\frac{5}{8}$ in. board $4\frac{1}{4}$ in. wide on each side of the middle row of sections, as I like the two-bee-way sort best. With four-bee-way sections they (the boards) can be put outside the triple row. I have found it economy to use whole sheets of foundation everywhere (except, perhaps, with swarms) well wired in. Two wires in a shallow-frame and good thick drone-base foundation makes extracting a pleasure. No fear then of putting too much "gusto" into the business. I have, up to the present, been able to sell my honey at a moderate price, so have no complaint to make on that score.

"I cannot give an opinion on the 'Wells system,' not yet having given it a trial. I have, however, made two hives, and stocked one last September with a nucleus lot in one side and a driven lot in the other.

"All the bee-keepers about here to whom I have spoken on the subject condemn the method. But I like to give things a fair trial, so as to be able to give one's own personal experience. It seems to me, Mr. Editor, that we too often look at things through other people's spectacles instead of 'proving all things' for ourselves. My idea of good management may be summed up as follows:—Head your colonies with young *well-bred* queens. Frequently renew combs, especially if pollen is superabundant in the locality. Restrict drone production to a minimum. Have everything interchangeable; nevertheless, number all parts and keep them for their own particular hive in case the bee-keepers' '*black beast*' should appear. Observe great cleanliness everywhere, and do not forget that carbolic acid, naphthaline, and naphthol beta are useful accessories in retaining health in the apiary.

"Compared with the veterans of the craft my own knowledge is as nothing. Consequently what I have written must be taken for what it is worth, as I have no wish to pose as an authority on things of which I know but the mere rudiments; and I trust these worthies (to whom I look up with respect and admiration) will bear with my egotism, putting it down to the influence of the 'dear bees.'"

CORRESPONDENCE.

(*Continued from page* 372.)

HINTS ON "SOLDERING."

HOME WORK FOR BEE-KEEPERS.

[3768.] It has often struck me that with the many metal appliances in use by bee-keepers a few hints on soldering would not be out of place. The art of soldering consists in joining metals by means of "hard" or "soft" solders. But I intend here to deal only with soft soldering or sweating. The tools, &c., required are for this few and cheap, consisting of a small "copper bit," an old pot, a ditto knife, a piece of emery cloth. The materials are equally cheap, consisting of, say, half a pound of "blow-pipe solder" (this kind melts readily and contains more tin than other kinds, and is therefore not so likely to be harmful to honey), (cost, 4d.), one pennyworth of spirits of salts, one pennyworth of resin. To get the spirits of salts go to an oilshop; for a penny you get half a pint; go to a chemist and ask for muriatic acid you get half an oz., both being exactly the same thing. Now, suppose we have a hole in a honey tin, well scrape round the same or rub with a small piece of emery cloth, as perfect cleanliness is necessary. To solder tin we require our spirits of salts "killed." To do this put a small quantity in a jar, put in some scraps of zinc, and stand in the open air for half an hour. Now put, by means of a stick (it would burn a brush), a small drop on hole. Put "copper bit" in a gas or fire, and get same hot (not red-hot), hold a stick of solder and "copper bit" to hole, when the solder will melt and run over the hole, and there you are, the job is done!

Having cleared the ground in this way, perhaps some of the conditions which go to make a success should be enumerated. To begin with the "copper bit." If we buy this new we shall find that the tip is bright like silver, this is the "tinning." This will wear off in time, so to renew, put "bit" in fire, get hot, file all round with an *old* file, dip in the "killed" spirit, and rub on a brick with a little solder, when if the heat is right the solder will flow all over the tip and the "bit" be again ready for use. If the copper bit gets red-hot, it will burn the "tinning" off, and it must be renewed before an effective job can be done with it. In soldering brass or copper, use a small portion of powdered resin instead of "killed spirits." All articles to be joined or mended must be clean and "tinned." In the case of so-called tin, this is iron plates covered with tin, so no further preparation is required, but if we want to solder, say, an iron tap to a tin extractor, we must first tin the tap. To do so, first clean it by means of a file or emery cloth, then cover with "killed spirit," heat by means of copper bit, or by holding in flame of gas, again rub with killed spirit, and melt solder over same by means of copper bit;

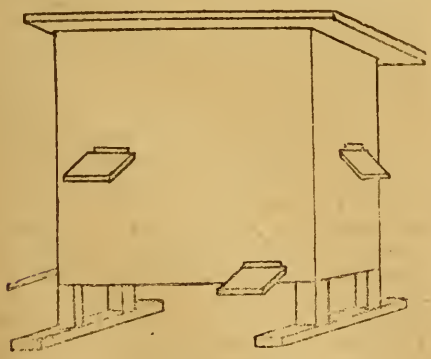
this will "tin" the tap, and it may then be soldered to extractor in usual way. If brass or copper, "tin" by same method, using resin instead of "killed spirits." To solder zinc—say a hive roof—first clean the place to be joined as before, then put on a little "raw spirit"—*i.e.*, as bought from shop—the solder will then flow freely over the place required, but the "bit" must not be quite so hot as for other soldering. The bit must be cleaned every time as taken from fire. To do this dip in the killed spirit jar, and also all work, as soon as finished, must be washed with cold water, to stop action of acid. There are several preparations sold to use in lieu of spirits of salts, but in nearly all cases this will prove the best preparation to use. The action of all such is to prevent oxidisation of the metal while the heat is being applied. Some "kill" the spirit by adding water, but the handiest method will be found to be as I have described. Hoping these few hints may be of use to those of us who do a "bit of tinkering," let me close by saying, "Don't give up because you burn yourself; but try, try again."—WILL. HAMPTON, *Richmond.*

HOUSE APIARIES.

A correspondent (F. B., Westmoreland) writes: "Can you inform me how to build a bee-house suitable for holding three or four frame-hives without outside cases, lifts, or roofs?" He also adds, "I should like a house of just such a height as would accommodate a body-box and two or three tiers of supers, with space to get at them easily?"

In reply, we cannot do better than reprint an article from a former number of the B.B.J. by our Scotch correspondent, Mr. W. McNally, of Glenluce, who says:—

For the establishing of out-apiaries, bee-houses are specially to be recommended.



Everything can be kept secure from molestation, and any extra appliances stored ready at hand. Even in exposed or badly fenced situations, the bee-keeper must sometimes of necessity keep his stocks in a house. The objections urged against their use are, chiefly, want of room for manipulations, want of room for supering, want of ventilation, entrances too near each other (thus encouraging young bees to enter the wrong hive, as well as young queens when out to get mated), and risk of disturbing all the lives during operations. In most cases all these objections may be remedied. My experience of bee-houses has been fairly extensive, having in use several shapes and sizes. My first attempt was, however, unsatisfactory. I had one made to hold twelve hives, almost identical to the one used by the late Rev. G. Raynor. In practice I found that the entrances were too near each

other, and there was a want of room for supering purposes—consequently I discarded it after trial. I have several bee-houses in use, made like accompanying sketch, and in which stocks have wintered better than in single hives. Each house, it will be seen, holds four hives. Entrances are placed as far apart as possible, and the hives can be worked on either the storifying or combination principle. The roof is hinged to lift up, the back opens outwards in two doors, thus giving plenty of 'elbow-room.' The inside is simply two long *trough*-like frame hives, and each stock is kept apart by division-boards. To those who do not wish to go to greater expense, I would recommend these houses, which, for the price of materials, do not exceed the cost of a weather-proof single frame-hive. Size of each is 4 ft. long by 4 ft. high by 20 in. wide. Materials required to make one are: four corner-posts, 2 × 2, cross-beams 4 × 2, bottom and centre shelves—strictly speaking, the floor-boards—of ⅞-in. jointed flooring: four boards, 9 × ½-in. and 4 ft. long for hive sides. All the other wood of ⅝-in. jointed and beaded lining, with roof covered with canvas, and painted, to make all secure.

For some years I have had in use, at an out apiary two miles from home, another house which holds twenty-two hives. The size is

9 ft. long by 6 ft. wide, and 7 ft. high. The hives are arranged in two rows, eight on each side, and six on the front or end, the door being on the other end. All manipulations can be carried on from inside of building. There is no floor in it; the bottom row of hives rests on the ground, the top row rests on two stout rails. I work this house on the non-swarming principle, and frequently have had stocks in it 3 ft. 6 in. in height. My experience of this house is that all that is necessary to make it complete is to have it on *wheels*, so that it could be moved from one locality to another. It would then appear somewhat similar to the illustration on preceding page, which shows how the bee-keepers of Germany are said to carry on migratory bee-keeping.

The advantage of having bee-houses on wheels requires only to be known to be more adopted. How very often it happens that, in one district, bees would have better foraging-ground, that it would pay to shift them to, were it not for the trouble and hard work involved in packing and unpacking hives. The greatest objection to bee-houses on wheels is the cost, but there are chances where one might secure a second-hand spring lorry, or the wheels and springs of a wagonette or carriage cheaply, which, with the cost of putting sides and top to make it into a suitable bee-house, would not exceed more than a few pounds.

Echoes from the Hives.

Fairspeir, Wychwood, Oxford, September 15.—It is a long time since I sent you an "Echo" from my hives, but during this last season or two we have been so scorched up by drought that I have not thought it worth while to trouble you with an account of our ill-luck which has affected the honey yield here so much. In this immediate neighbourhood we depend for our honey crop entirely on clover and sainfoin, as we have no orchards, meadows, or limes. Last spring was cold and uncertain, and this caused a good deal of dwindling and chilled brood. The honey flow began about June 3 and lasted till June 15, after which date very little surplus was gathered, all bee-forage there being either cut or withered up. Not many swarms round here, for bees bred slowly and then filled up the brood-cells rapidly with honey during the short and early honey flow. I used to keep over a hundred stocks, but owing to bad seasons and to my 660-acre farm requiring so much personal attention, I found it quite impossible to manage such an apiary entirely unaided—in fact, it was slavery to myself—as I cannot get intelligent bee assistance near me, so that I was reluctantly compelled to considerably reduce the number of my stocks.—Apiarist.

Queries and Replies.

[2275.] *Bee Parasites.*—I have only been a subscriber to the Bee Journal for twelve months, but have kept bees for over six years, and I take this opportunity to inquire of you or your readers for a little information with regard to insects which, I am given to understand, infest bees, and especially if they are the cause of the following:—We have a garden and orchard of half an acre in extent, in which I keep from six to ten colonies of bees in frame-hives. During the months of July and August every year, we are terribly punished with a certain insect—which would seem to be invisible to the naked eye—constantly biting us and raising blisters just as if we had been bitten by the ordinary house flea. These insects infest the trees and plants all over the garden, though mainly where the hives are kept; but in the gardens adjoining we can hear of no complaints. A friend of mine—a medical man—told me that bees were literally covered with insects at this time of the year, and these, alighting on human beings, worked their way under the skin. They are so small, he says, that they can only be seen with the aid of a microscope. My friend tells me that he also has experienced the same annoyance from these insects as myself. Will you, therefore, kindly enlighten me, if possible, along with other bee friends to whom I have mentioned the matter?—W. B. B., *Leeds.*

Reply.—In the first place we must—with all due respect to your medical friend—say that, whatever may be the nature of the insect complained of, the mischief resulting cannot justly be charged either to bees or the proximity of bee-hives. So far as the honey bee being "literally covered with insects at this time of the year," as stated, the only parasite which (at times, but not often) infests the hive bee is the *Braula cœca*, or blind louse; and this, fortunately, is neither invisible nor very numerous in the few hives where found. Our correspondent may, therefore, rest assured that, whatever may be the cause of the trouble mentioned, the bees are, as already said, blameless. On the other hand, we cannot quite make out how insects, "visible only with the aid of a microscope," can be said to "infest trees and plants all over the garden," any more than we can understand how invisible insects, with which the bodies of bees are "literally covered at this time of the year," can alight on human beings and work their way beneath the skin, as stated above. It is true that the *Bombus*, or humble bee, is often infested with a parasite smaller than the *Braula cœca*, but it causes no trouble or annoyance save to the humble bee itself.

[2276.] *Honey for Market.*—As this is the first year I have gone in for extracted honey, I have been taking notice of the samples seen in shops for sale, and find it much more

attractive-looking than mine. It is more transparent, thinner, and a better colour; mine being very thick, and darker than that sold in the shops. Is this my fault, or is there some trade secret, as with other things?—MAUD MARSHALL, *Epsom.*

REPLY.—There is no "trade secret" by which dark honey can be made light in colour, but it is well known to all practical men that light-coloured honey sells more readily than dark. The fact of yours being "very thick" while that in the shops was thin is a strong point in favour of the former, and if the flavour is good, it should be quite saleable.

[2277.] *Grading Honey—Unripe Honey as Bee-food.*—Could you give me a few words of explanation as to what is meant by *grading honey?* 1. Does it mean choosing out the *lightest* honey as the best, or is it simply being careful not to draw off from the ripener any of the thin honey likely to ferment? I am anxious only to sell my best, but I do not know how to grade honey. 2. Will unsealed honey keep for feeding back to bees at convenience, or ought it to be given as food at once lest it should ferment? and do I understand rightly that, before finally closing hives for winter, all honey then unsealed should be extracted and taken away? and if so, must this be thrown away, as being only the thin honey? 3. In the "Guide Book" it tells you that the honey will be ripened and fit for bottling if left for a few days in a warm place. I have no place where I can put my ripener at a temp. of 80 deg. I suppose honey ripens better in a warm place, but at 60 deg. does it ripen in the same way, but take longer—perhaps a week? 4. Is there any good method of putting away supers? I suppose they should winter in a cupboard or box. My apiary is not a very dry one, and I am afraid of the wax-moth making havoc.—A BEGINNER, *North Wales, September* 16.

REPLY.—1. "Grading" simply means sorting out (*i.e.*, according to quality), good, middling, and poor. 2. Thin, unripe honey should be made hot to rid it of superfluous moisture before using as bee-food. 3. Honey will not ripen at a temperature of 60 deg. It should always be stored away in a dry warm place. 4. Supers containing comb should be wrapped carefully in plenty of newspapers to exclude moths before packing away for next season.

Bee Shows to Come.

September 25 to October 21, at St. James' Hall, Manchester. Show of British honey, honey-vinegar, and mead, under the auspices of the Lancashire Bee-keepers' Association, at the third British and Colonial Industrial Exhibition. Liberal money prizes. Schedules from Fredk. H. Taylor, Hon. Sec. Lancashire B.K.A., Old Hall-lane, Fallowfield, Manchester, or from Albert P. Baker, general manager B. and C.I.E., St. James' Hall, Manchester. **Entries close, September 21.**

September 30, at Jedburgh.—Annual Show the Roxburghshire B.K.A., in the Church Hall, Queen street. Twenty-five classes for honey, &c. Schedules from Thos. Clark, Secretary, Pleasants, Jedburgh, N.B. **Entries close September 26.**

September 30 to October 7 at the Agricultural Hall, London.—Honey Show in connection with the fourth Annual Exhibition of the Grocery and Kindred Trades. Classes (open to master grocers only) for comb-honey in sections and for extracted honey.

October 17 to 20 at the Agricultural Hall, London.—Show of Honey and Bee-produce in connection with the British Dairy Farmers' Association. Numerous and liberal prizes for honey, &c.

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

S. HARBORNE (Treen).—*Early Granulation of Honey.*—1. Various causes in different seasons, which are not easy to explain, conduce to the early granulation of honey. 2. Granulation may be retarded, but not prevented, by keeping the honey in a warm room or a cupboard near the fire. 3. Granulated honey, if carefully liquefied—by immersing the vessel containing it in hot water till the honey becomes clear and liquid—will not granulate for several months if kept in a warm place.

G. (Keswick).—*Destroying Condemned Bees in Frame Hives.*—There certainly are "more modern" ways of destroying bees than by the old-fashioned dose of sulphur-fumes, such as using cyanide of potassium; but we question the advantage of such, to say nothing of the dangerous character of the last-named agent. Besides, sulphur is so simple and so effectual as to need no improving. For using sulphur with frame-hives an "eke" or lift 2 or 3 inches deep is required to raise the hive that distance from its floor-board. The lid of a 1-lb. coffee tin holds a spoonful of sulphur (powdered), and when the "eke" is placed below the body-box, the sulphur is set on floor-board, and a red-hot cinder dropped in it sets it alight; the hive of bees, with entrance closed, is then placed on the eke, and in a couple of minutes all is over!

J. M. (Wishaw, N.B.)—*Moving Bees with Furniture.*—1. Shropshire is considered a good bee-county, and there is, we think, plenty of forage ground three miles out from Market Drayton. 2. If you can dispose of the bees in Scotland as they stand, it would, we think, be better than taking them so far by rail along with household furniture. There would be no difficulty in buying three stocks at a moderate price in Shropshire to replace them, and all risk would thus be avoided.

F. J. R. (Ipswich).—*Dealing with Foul Brood.*—The hive from which comb was taken is undoubtedly affected with foul brood, but as nearly all the dead larvæ are "chilled" only, it shows that the disease has been more or less held in check by the preventive

used. So far as remedying the mischief, we advise removal of every comb that contains dead larvæ, and wintering the bees on only so many frames as they can *cover well.* It is more than probable that some feeding will be necessary after taking honey from the brood-nest as stated, and this feeding should be started without delay, giving syrup food to make up the winter stores to about 25 lb. Medicate all food given. If you had possessed a second stock of bees our advice would have taken the form of getting the diseased lot off their combs into an empty hive on full sheets of foundation, and feeding well to enable the bees to build new combs; but with only one stock to deal with, it may be best to trust to the medicated food and the present vigorous condition of the bees to carry them safely through. Then, if the worst comes to the comb, and the bees show traces of disease in spring, we should do away with the stock entirely and start with a healthy one.

F. A. S. (Greenock).—*Moving Bees Half-a-Mile.*—There is certainly some risk of loss in moving bees half-a-mile at this season; but with a loch—or lake—of that width between the old and new locations the risk is reduced to a minimum, especially if some means are adopted to alter the outside appearance of the hives for a few days after removal.

A. T. K. (Blackpool).—*Inducing Bees to carry Unsealed Honey into Brood Nest.*—1. If the surplus-chamber, with partly sealed frames of comb, is set above quilts that cover the brood nest, as proposed, it is quite probable that the bees may carry the unsealed stores below; but at times they refuse to do this, for no accountable reason, so you should try them, taking the precaution to only cover the surplus-chamber with a single thin covering to make it cool. 2. With an extractor, of course, the thing would be easily enough managed, but without one there is no course but the above to follow.

*** *Several communications, including letters from "W. W." (Hull), "W. J. B." (Norfolk), and "M. K." (Piltown), are in type and will appear next week.*

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

NEW FOREST.—SALE OF APIARY, by PUBLIC AUCTION, on 4th OCTOBER, of 50 stocks, 23 standard bar-frame hives, and 26 flat-topped skeps, and supers; all healthy and strong; owner having let for seven years; also Sale of Honey in sections. MAJOR HEATHCOTE, Broomy Lodge, near Ringwood, Hants.

HEALTHY DRIVEN BEES with Queen, 5s. each lot. Carriage paid. Ready for immediate despatch. CROSBY, Sutton-road, Kidderminster.

COMB HONEY.—120 well-filled SECTIONS. Wh offers? KNEWSTUBB, Longmarton, Carlisle. 485

1,000 lb. good light HONEY, 6d. lb.; sample 3d. Apply, JOHNSON & SON, Soham, Cambs. 495

Prepaid Advertisements (*Continued*).

PURE EXTRACTED HONEY, 56s. per cwt., tins included. GEO. REYNOLDS, Eaton Ford, St. Neots. 473

FINE HAMPSHIRE HONEY, 56s. cwt. Customer send tins. LONGLEY, Church-street, Basingstoke. 491

FOR SALE, THREE HIVES with strong Stocks of Bees. Mrs. CRUIKSHANK, Sandridge Vicarage, St. Albans. 484

STANDARD FRAMES of HONEY, 1s. each. Just the thing for driven bees. JOHN WALTON, "Honey Cott," Weston, Leamington. 494

DRIVEN BEES, guaranteed healthy, with Fertile Queen, 3s. 6d. per lot; Queens only, 1s. 6d. W. SOLE, "Fairlawn," Merton, Surrey.

EXTRACTED ENGLISH HONEY, ¼ cwt., 6½d. lb.; tins free; sample, 2d.; deposit system. RICHARD DUTTON, Terling, Witham, Essex. 474

EXTRACTED HONEY, 17 cwt., FOR SALE. Splendid quality; sample, 3d.; tins found. PULLEN, Love's Apiary, Ramsbury, Hungerford. 475

SECTIONS, 7s. doz. good quality; dark ones, 6s. doz. Extracted Honey, in 3-lb. tins, 6d. lb.; sample, 3d. LING, Shady Camp, Linton, Cambs. 476

WANTED, CASES of STUFFED BIRDS in good condition. Exchange Strong Stocks Bees in skeps. COLLINS, Bee-keeper, Bloxham, Oxon. 477

THREE large WARWICK FEEDERS, Meadow's Swarm Catcher. Offers, OLDFIELD, Stapleton, Salop. 481

HONEY. — FOR SALE, 3 cwt. Pure Extracted HONEY in bulk. Sample free. DAVID DAVIES, Trevecca Farm, Talgarth, Breconshire. 480

CHESHIRE'S CHARTS (10s. 6d.), quite new; Block (Wyandotte's) for memorandums, introduces numerous customers. Exchange. COLTRIP GILBERT, "C.C. Expert," Stratton, Wilts. 489

HONEY, 4 cwt. FOR SALE. Good colour, flavour, and consistency. Guaranteed pure. 5½d. lb. on rail; buyer finding tins. KIGHT, Overseer, Chisledon, Swindon. 472

PURE ENGLISH HONEY 5d. and 6½d. lb. Sample 2d. TWO STRONG STOCKS in skeps, 11s. each. Cash or deposit. A. COE, Ridgewell, Halstead, Essex.

BEE-STING PAIN KILLER. This tincture will allay pain caused by bee and wasp stings. Specially recommended to all sensitive persons. Sample, post free, 7d. from HOULDER, Methwold, Norfolk. 493

200 well-finished, 1-lb. SECTIONS (good colour) at 8s. per doz., in metal cases; also 144 1-lb. SCREW TOP BOTTLES (good flavour) at 7s. 6d. doz. W. G. HEDGES, Bishop's Waltham, Hants. 492

WHO will Save the Poor Bees from the Sulphur Pit? The only charge is for collecting, &c. Not per lb. Disease not known in district. Apply, POSTMASTER, Ugglebarnby, Sleights, R.S.O., Yorks. 482

HONEY.—A large quantity of prime EXTRACTED HONEY FOR SALE, 50s. per cwt.; smaller quantities, 6d. per lb. Pound sample 6d. FLOWER, Amesbury, Wilts. 486

FOR WINTER EVENINGS. — Good TREADLE LATHE FOR SALE, 17s. 6d., or Exchange BEE APPLIANCES, 20s.; also capital LAWN MOWER, 12 inches wide, Green's patent chain gear, 17s. 6d. CLAY, Albert-road, Wellington, Salop. 487

HEALTHY DRIVEN BEES, any quantity, direct from the moors, 3s. 6d. per lot, packing 6d. extra or boxes returned; also ½-dozen Skeps, containing bees and about 30 lb. heather honey, 10s. each. Bargain. BOYES BROS. Byegate, Helmsley. 483

24 strong STOCKS BEES FOR SALE, in wood hives; also Seven Straw Hives with Bees, together with Twelve empty New Straw Hives with other Bee-keeping Plant. Must be sold (separate or all together). Offer to S. L. PROWDE, Kilburn Vicarage, Easingwold Yorks 490

Editorial, Notices, &c.

USEFUL HINTS.

WEATHER AND ITS WARNINGS.—After a period of continued fine weather, prolonged considerably beyond the usual time limit, honey gathering from all sources may now be said to have ended for the year. The net results, so far as weight of the yield, as reported, have been variable; but, on the whole, 1899 will, no doubt, be counted among the years of profitable bee-keeping. It was at one time thought that northern bee-men—especially those located in Scotland—were in for a season of failure, so bad a return did the clover (or, as our Scotch friends term it, "flower honey") harvest close with; but the bees have since then done so exceedingly well on the heather bloom that a very satisfactory yield has followed, even in Scotland.

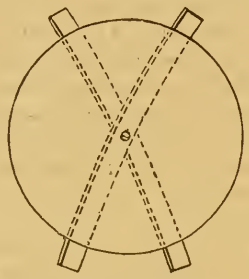
Assuming, then, that all surplus honey has been removed from the hives, we must not forget that "chill October" is upon us, and it becomes our duty to warn readers who lack the experience of older hands at the craft, that the absolute need for "seeing to the bees" is urgent, and that such feeding-up as is necessary must be attended to without loss of time before the cold weather, now close at hand, reduces the erstwhile active and busy workers—as it assuredly will—to a condition of torpor so that food offered them will be left untouched though the combs in the hive are almost devoid of winter stores. This means probable death to the colony before the dawn of another season, but it only pictures a real source of danger often either overlooked or undreamt of by beginners, who, we trust, will profit by this "hint," and act upon it without delay.

THE PAST SEASON.—We have already referred to the variableness of the honey season, now closed, and it is certain that the complaints of a poor yield from the fruit-bloom—in what are known as early districts—were well founded; but, if any doubt existed as to the season's crop as a whole, a glance down our "prepaid" advertisement columns last week would, we think, effectually dispel it. We make this reference to advertisements as applying only to the general body of bee-keepers, apart from those who produce honey on a large scale, and, having already an established market, do not need to advertise their produce. But if individual results count for anything in gauging the season of '99, why Mr. Lancelot Quayle—whose "record" return from a single hive in '97 has made his name famous in bee-annals—has this year surpassed his former "take" of 334 lb. from a single hive! The exact weight of Mr. Quayle's mammoth return from one colony this season has not yet been declared, but, seeing that his present year's crop includes a good return from the heather—evidently plentiful about Glenmay—while that of '97 had none from this source, one can readily believe that the former total will be surpassed.

PREPARING FOR WINTER.—Feeding up where needed, and uniting weak lots of bees—too few in number to stand alone the vigours of the winter—will now be in full swing. After the remarkably fine autumn and the quantity of late honey gathered in many districts, less feeding than usual will be needed this year; but it must not be forgotten that many colonies will have stored nearly all their ingathering in surplus chambers, the removal of which may leave a very badly furnished storehouse below. In no case, therefore, must it be taken for granted that food in outside combs means food enough. All combs should be examined to make sure as to stores; bearing in mind that weight alone is not a safe guide, because many combs may be loaded with pollen only, which is not food for adult bees. And such combs, when found, should be removed altogether, along with any others over and above the number the bees can cover. In giving food at this season it is best to use a feeder of the "rapid" type, large enough to hold the full supply needed; and, after the bees have been tested as to their readiness to take food readily by giving half a pint of warm syrup as a trial dose, the rest may be given at one operation next evening after sunset, and, if the feeder is properly arranged, its contents will be taken down by the following morning.

In cases where winter stores are found to be short, and weather has become too cold for bees to take syrup-food, it may be desirable to give a cake of soft candy.

For this purpose the simple contrivance shown is useful. It is known as the "St. Beuno's" candy-feeder, and consists of two curved pieces of wood, crossed and united by an inch or inch and a half screw, the thread of which protrudes into the curvature. Laying this on its back, legs upwards, in a soup-plate, with a sheet of paper underneath, the cooked candy is poured in, until about 1 in. of each leg is left exposed. The device need not touch the bottom of the plate; if it dips under the surface a ½ in. it will do, and for this purpose a piece of cardboard laid across the four legs will sufficiently overcome the buoyancy of the



wood until the candy sets. Thus, when the candy is placed over the frames, the four legs protruding slantingly an inch long, give bee-space at once under its whole area.

Building Up Stocks from Driven Bees.—This method of increase in autumn has now become so common that it may be well to remind those who have still their driven bees to buy, of the difficulties that stand in the way of success so late in the season as the beginning of October. So numerous indeed are these difficulties that we don't think it advisable to make the attempt unless built-out combs are on hand or obtainable. With five standard frames of comb and as many driven bees as will crowd the space afforded and cover the combs well from side to side, all will be well, because the bees will readily take down and seal over five or six quarts of syrup if the hive is made snug and warm during the process; and this, with a cake of candy overhead, to keep them going for a month, will go far to ensure a healthy stock in spring. But to put driven bees into an empty hive on sheets of foundation now, and expect combs built, food stored and sealed, and bees going into winter quarters with the needful amount of vitality and vigour left in them to live through a hard winter, and do well next year, is to expect the unlikely to happen, no matter what care is taken by the bee-keeper. Our advice therefore is, don't try it.

"Bee Journal" Advertisements.—It can hardly be charged against this journal that "capital" is made out of "testimonials" regarding the value of its advertising pages as a medium of communication between buyers and sellers. Indeed, so foreign is it to our rule and habit to indulge in "puffing" ourselves in this way (not that there is anything wrong in a little legitimate "trumpeting" from the keen business standpoint), that we may be pardoned for referring to a couple of notes which reached us one day last week. One of these contains a query, not only useful as helping to gauge the past season's honey yield, but also in the direction of gauging the value of a single advertisement in one issue of the B.B.J. Now, to pass over the query without reply would savour as much of discourtesy as it would of what is called "smug complacency," if not of hypocrisy, to say that we are not very pleased at the receipt of such testimony to the usefulness of the Bee Journal as an advertising medium.

The query reads thus:—"September 21, 1899.—In reply to my advertisement in your journal I have had twenty tons of honey (English, Scotch, and Welsh) offered me in five days! Is this a record?

It is, of course, quite beyond our power to name "record" results such as our correspondent refers to, but if a single insertion of his advertisement resulted as stated, and thereby brings about a good sale of honey produced in the hives of readers, it tends to show that the B.B.J. is helpful beyond the literary matter contained in its pages. We might also ask if our "prepaid" advertisement columns on the date referred to do not give as fair an indication of the current market price of honey as is obtainable in any other way?

*** *We would remind readers who purpose subscribing to the compensation fund connected with the "Bath Bee Case" that—as announced on page 370 last week—the list closes this month, and our next issue will contain the names of donors received subsequently to the list on page 370.*—[Eds.]

SOUTH OF SCOTLAND B.K.A.

ANNUAL SHOW AT DUMFRIES.

The annual show of honey, under the auspices of the South of Scotland Bee-keepers' Association, was held on the 30th ult., in conjunction with the exhibition of the Horticultural Society. The quantity of honey staged was fairly gratifying. The exhibits, however, were much fewer than might have been the case but for the unfavourable season in Scotland. In respect of quality, the extracted honey in the open class was particularly good. Sections also were very fair. The Rev. J. B. Blake, Gorebridge, officiated as judge for honey, and made the following awards :—

OPEN CLASS.

Three 1-lb. Jars Extracted Honey.—1st, W. Patchett, Thoresway, Lincs. ; 2nd, Rev. H. F. Goffe, Thoresway ; 3rd, S. G. Leigh, Broughton ; v.h.c., John Duncan ; h.c., J. W. Nelson, Appleby.

Three 1-lb. Sections.—1st, J. W. Nelson ; 2nd, James Kerr, Dumfries ; 3rd, Miss Muir, Burnfoot ; v.h.c., J. Muir, Burnfoot ; h.c., John M'Donald, Lochfoot.

Single 1-lb. Jar Extracted Honey.—1st, W. Hatliffe, Thoresway, Lincs. ; 2nd, W. Patchett; 3rd, Rev. H. F. Goffe.

Single 1-lb. Section.—1st, J. Muir ; 2nd, James Kerr ; 3rd, W. Storey, Llanduduo, N. Wales.

MEMBERS ONLY.

Super of Honey (under 25 lb.).—1st, James Kerr ; 2nd, R. Grierson.

Super of Honey (under 15 lb.).—1st, J. M'Donald ; 2nd, H. Marrs, Newtonards.

Six 1-lb. Sections.—1st, Jas. Kerr; 2nd, John Muir ; 3rd, J. M'Donald.

Six 1-lb. Jars Extracted Honey.—J. Muir.

Two 1-lb. Jars Extracted Honey.—1st, Jas. Kerr ; 2nd, J. Muir.

Six 1-lb. Sections.—1st, H. Marrs ; 2nd, W. Watret ; 3rd, D. J. Maxwell, Dalgonar Mill.

Four 1-lb. Heather Sections.—1st, John M'Donald ; 2nd, Jas. Kerr ; 3rd, R. Grierson, Moat, Lochrutton.

Four 1-lb. Jars Heather Honey.—1st, R. Grierson ; 2nd, J. M'Donald ; 3rd, D. J. Maxwell.

Special for Most Prizes in Heather Classes.—J. M'Donald.

Beeswax.—Henderson & Brown, Dunvale, Maxwelltown.

MEMBERS WITH NOT OVER SIX HIVES.

Six 1-lb. Sections.—1st, J. Muir; 2nd, Henry Marrs ; 3rd, Henderson & Brown.

Three 2-lb. Sections.—1st, W. Watret ; 2nd, Henderson & Brown ; 3rd, H. Marrs.

Super of Honey.—1st and Silver Medal, H. Marrs ; 2nd, J. M'Donald ; 3rd, J. Muir.

Six 1-lb. Jars Extracted Honey.—1st, J. Muir ; 2nd, Henderson & Brown ; 3rd, H. Marrs.

Best Exhibit in Extracted Honey.—Silver Medal, W. Patchett.

Best Exhibit in Comb Honey.—1st, James Kerr.—(*Communicated*).

HONEY SHOW AT CASTLE DOUGLAS.

After having been allowed to lapse for a year, the Galloway Horticultural and Honey Society was revived, and its exhibition was held on September 7 in the Town Hall, Castle Douglas. The entries were as numerous as in former days, and we are glad to learn that honey continues to be a chief feature of the show, and although the quantity staged was not very large, there was really no inferior honey on the table. In the class for 1-lb. jars of extracted honey (eighteen entries) English exhibitors came very much to the front, especially those from the Fenn district of Lincolnshire. In the class for 1-lb. sections (twelve entries) the Scotch exhibitors stood well. There were some fine sections of heather honey, but no great display of supers. That style of raising honey seems to be falling away largely, but those shown were very good, the prize winners being excellent.

The Rev. R. McClelland, Inchinnan, judged the honey classes, and made the following awards :—

OPEN CLASSES.

Three 1-lb. Jars Extracted Honey.—1st and silver medal, W. G. Dear, Salisbury, Wilts ; 2nd and bronze medal, W. Hatliff, Caistor, Lincs. ; 3rd, W. Hogg; 4th and 5th, W. Patchett, North Caistor, Lincs. ; 6th, Rev. H. J. Goffe, Caistor, Lincs. ; 7th, Mrs. Ross, Dumfries ; 8th, J. W. Nelson, Appleby ; h.c., R. Slater, Hardgate ; Jas. Kerr, Dumfries ; John Ross, Dumfries ; Harry Wood, Lichfield, Staffs.

Three 1-lb. Sections. — 1st and silver medal, Mrs. Ross ; 2nd, W. Hogg ; 3rd, Captain Black, Castle-Douglas ; 4th, Jas. Kerr ; 5th, John Ross ; 6th, H. Seamark, Cambridge ; 7th, John Muir, Burnfoot ; h.c., Harry Wood, W. Houston, J. W. Nelson.

Super of Honey. — 1st, Mrs. Ross ; 2nd, James Austin ; 3rd, John Muir ; 4th, W. Hogg ; 5th, S. M'Monies.

Three 2-lb. Sections.—1st, Mrs. Ross ; 2nd, James Austin.

Six 1-lb. Sections.—1st, Mrs. Ross ; 2nd, W. Hogg ; 3rd, James Learmont, Balmaghie ; v.h.c., James Austin ; h.c., James Kerr.

Six 1-lb. Jars Extracted Honey. — 1st, Mrs. Ross ; 2nd, Rev. H. J. Goffe ; 3rd, R. Slater ; John Muir.

Beeswax. — 1st, Mrs. Ross ; 2nd, John Muir ; v.h.c., R. Slater.

AMATEURS' CLASSES.

Three 1-lb. Sections.—1st, John Hamilton, Castle-Douglas ; 2nd, Wm. Houston ; 3rd, Miss Muir ; v.h.c., John Muir.

Three 1-lb. Jars Extracted Honey.—1st, R. Slater ; 2nd, J. Johnstone, Dumfries ; 3rd, John Muir ; v.h.c., Miss Muir.—(*Communicated.*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

THE SEASON IN YORKSHIRE.

[3769.] Having been for some time a reader of your instructive little paper, the BEE JOURNAL, I thought I would send on a line about the doings of our bees in this part of Yorkshire. We are now in the midst of the honey, and nearing the close of the heather harvest. The cold, wet spring did much damage to our twenty stocks, weakening them considerably, and making it necessary to feed some of them a little. However, as the season advanced, the bees quickly made up for lost time, and never have we had sections and frames filled from clover in anything like the same quantity. Then, as we are on the edge of the moor, we generally have to keep the stocks strong and ready for the heather, and in this way reap the benefit of two harvests—one from each source. This year the clover has eclipsed the heather for weight of yield. The dry weather kept the sap back, and when at last it did rain, we got rather too much. However, on the whole, we have had a splendid time; and it is such seasons as these that help bee-keepers over the dull ones.

I have been much interested in the correspondence in your pages on "selling honey" and the price it should fetch. Personally, I should be glad if some practicable plan could be found of securing a ready wholesale trade. I have myself experienced difficulty in getting a market. In one case, when away from home, I was showing a sample of heather honey to the buyer for one of the largest wholesale firms of chemists in Manchester—a sample, too, which had won prizes at local shows, and, in the opinion of good judges, it was first class. Yet for this honey he had the nerve to offer me 25s. per cwt. "It's rather too dark to suit me," said he, as a reason for making this offer. A retail chemist in a large way of business afterwards told me it was splendid stuff: "But," said he, "I may tell you, in confidence, that I can buy honey at 4½d. per lb. and sell it at 1s. 2d. Now," he added, "which would you do if you were in my place—buy English at 8d. or 9d. and sell at the price named, or buy the other?" "Well," I replied, "by all means buy all you can at 4½d. and sell it at 1s. 4d., if you like." The above sounds like romancing, but it is true, nevertheless. You must excuse the usual profit and loss account, as we have not finished yet; but you shall have it later on. Hoping all bee-keepers have had a golden harvest in honey and money.—G. A. BARNES, *Pickering, Yorks, September* 16.

THE LATE FLOWERING LIME.

TILIA PETIOLARIS.

[3770.] In reply to Mr. E. D. Till's query (3767, p. 372), I beg to say *Tilia petiolaris* and *Tilia pendula* are synonymous names, the "*variegata*" being merely a variety of the same (leaves slightly variegated) and, of course, *alba* and *argenta* referring to colour. The *ordinary* nurseryman would not know anything more than the common Lime (*vulgaris*) and would not know even that there are others than those he, and ninety-nine out of 100 nurserymen, deals in. Personally, I do not know any, even of our largest nurseries, in which *petiolaris* is grown, but, of course, there may be some about. If your readers are offered any by growers, I advise them to make sure that the grower knows the distinction, and does not take the name as a little known synonym for *vulgaris*, which it is not.—GEORGE ROSE, 50, *Great Charlotte-street, Liverpool, September* 23.

[3771.] I beg to quote below a reply from Dicksons, Limited, the well-known nurserymen of Chester, in answer to my letter asking for their price of limes. They say:—"We can supply limes, true red twigged as on page 13 of our forest tree catalogue; Snowberry, as offered on page 18; *Tilia petiolaris* (syn., *Alba pendula*), nice trees on straight, clean stems, at 30s. to 42s. per dozen."

What I want to know is, would it pay to buy a dozen? and how long would it be before I could expect a reasonable return for my outlay? I may say that the trees referred to are from 10 ft. to 12 ft. high.—J. C., *Bidston, Cheshire, September* 24.

[We rather think that both Mr. Rose and Messrs. Dicksons are in error with regard to *Tilia petiolaris* so far as the variety of lime mentioned being synonymous with *T. petiolaris* or *T. variegata*, and this being so, Mr. Rose's caution about making sure of getting the actual variety to which attention is drawn on page 361, is useful, and should certainly be acted upon by those intending to plant the lime tree referred to.—EDS.]

INSTRUCTION IN BEE-KEEPING.

A BIT OF "SHARP PRACTICE."

[3772.] I have been "done" (some would say "done brown") and I smart under the fact. This being so, I ask your advice under the following circumstances:—

By way of introduction let me say I have been a bee-keeper only a short time. I bought two stocks of bees in skeps from a neighbour, an old skeppist of over twenty years' standing, who volunteered to instruct me in the art of bee-keeping. I was glad of his proffered aid, and I went into the business with a will.

(*Conclusion on page* 384.)

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Mr. Govan's apiary shown below is a very good example of what may be done with non-rural surroundings in making a neat bee-garden. The particulars he sends are very interesting and complete, but, being written some time ago, we hope he will send us his results for the present year. He says :—

"I got my first idea of starting bee-keeping from an article I read in the weekly periodical called *Answers*, describing how a man kept a hive of bees on the roof of his house in the middle of London. On mentioning this to a friend who works in the same factory as myself, we there and then agreed to join forces, get a few hives together, and carry out the suggestion. This was in the spring of 1894.

"We first of all purchased a skep of bees from Scotland, and later on purchased a couple of swarms from a well-known London firm, which were sent to us in their "Sandringham" hives. Having got the bees and other necessary appliances we then set ourselves to learn how to manage them. In the first place we procured Cowan's 'Guide Book,' and at the same time commenced to take the BRITISH BEE JOURNAL, and from these and practical experience we soon learned how to go about the business. The first year we got no surplus honey, but were content to find ourselves on the fair road to success and had hopes of doing well in the future. In the following year we managed to secure a surplus of 45 lb. per hive, one colony alone giving 105 1-lb. sections.

"This hive, I may mention, did not swarm in the year 1898. In the years 1896 and 1897 our hives yielded an average return in surplus honey of 56 lb. per hive, but 1898, I regret to say, only returned us about half that quantity, notwithstanding stocks were very strong and white clover very plentiful, but we wanted the moisture. Like a good many other bee-keepers all over the kingdom we got a quantity of dark honey or honey-dew last year, and sections were not so well filled nor equal in appearance to those usual here.

"Twice we have competed at the Royal Dublin Society's Show. The first year we got second prize for extracted heather honey, and in 1897 we secured two firsts—one for extracted light honey, and the other for light honey in sections.

"The main honey crop in this district comes from the white clover, of which there is a good quantity, most of the land round about being kept for grazing purposes.

"At present our apiary numbers twenty-four stocks, and, as you can see from photo, is in a yard surrounded with high walls, which form a good protection from any stray animals, and also cause the bees to rise clear of everything and every one thus securing a clear flight.

"We find bee-keeping pay fairly well, although the price of honey here is rather low as a general rule."

MR. T. A. GOVAN'S APIARY, SAGGART, CO. DUBLIN.

(*Correspondence continued from page* 382.)

I bought five more stocks from another neighbour, so in all I had seven hives. I began to read bee-books, and to take the BEE JOURNAL weekly, and from the latter I have got many things that have been a great help to me. But somehow the instructions of my skeppist neighbour did not coincide either with what appeared in my bee-books or the B.B.J.; consequently, I used to ask questions, and sometimes—timidly, of course—make a suggestion, when my sapient instructor would promptly rejoin that "bee-books and bee-papers were of no use—I should be better without them." Of course, I thought differently; but he was too "wise about bees" for a mere beginner to argue with, so I said nothing and took my own course. Later on, when he found I was not following his instructions, he gave me up as a bad job, declaring it was useless showing me anything, as I would not do as I was told. Eventually, on getting him to discuss issues, after I had learned something myself from my reading, I found him to be absolutely ignorant on all the salient points of modern bee-keeping. But there is one item of old-fashioned management in which my old friend is no doubt a master, and it forms the main "item" of this letter, so far as my being "done" is concerned.

To make myself clear, I must explain that I bought another stock of bees in skep from my neighbour—and teacher—in July last for 15s. There was at the time of purchase a small straw cap or super on the hive. The super was empty at the time, and the seller took from me a straw skep in exchange for the empty super fixed upon the skep I bought. It was my intention to take this hive along with my others to the moors for the heather harvest, but, unfortunately, I was unable to get the bees to the heather, and decided to let them remain in my neighbour's garden (with his entire concurrence and consent) till the autumn.

On the 16th of present month my neighbour very kindly brought my purchased skep of bees and placed it in my garden, but it was *minus* the super, which had disappeared! Moreover, it would seem I am not supposed to have been wronged in any way by this proceeding. But when I tell you that the stock is in a large skep (16 in. diameter), and the bees are very strong, seeing also that there is a common of about 10,000 acres of heather about a mile away, what is your opinion as to there being a good weight of honey in the super conveniently removed before delivery? I consider that my "innocence" as a bee-keeper has been presumed upon, and that I have been "done!" What do you say?—SIMPLICITY.

[We should say that your neighbour be asked to return the portion of your property that he has purloined, because whether the super contained honey (as no doubt it did) or not, it is yours. No wonder the old gentleman's teaching does not "coincide" with that of the "books" if this is the form it takes.—EDS.]

REMOVING BEES FROM ROOF.

[3773.] In your issue of August 26, a correspondent (2258, page 335) asks about getting bees out of the roof of a house. It may, therefore, be interesting to know that I took a colony of bees on August 16 from under a lead flat as follows:—I made no attempt to secure the bees, considering that I should fail to manage it successfully. I first applied a little smoke at the entrance hole, then lifted off first the lead roof, and next the boards beneath. The bees were quiet to work with, an occasional puff of smoke acting very well. I wore a veil and turned my sleeves up (I never wear gloves). Each piece of comb was carefully cut away from the rafters and put into a large pan at my side after I had brushed or smoked the bees from it. After about two hours, the whole of the combs had been secured, and I carried them down the ladder. Stings, however, were rather numerous, I got about a score, but most of them the result of pressing bees, unavoidably, perhaps, but few, if any, from the hostility of them. The amount of honey obtained after draining the comb was 20 lb., all of it clean and good. There was not much brood, but such combs as contained this were put into a weak hive at home. The swarm entered the roof in the early part of May of this year.

I have also taken a bees' nest from a tree. In this case a hole had to be cut with the saw; result, 14 lb. of good honey. I know of five other nests in trees in the neighbourhood, all of which I have been asked to take. I am sorry not to be able to preserve the bees, but am afraid it is impossible. This is my first year as a bee-keeper, and I would ask, Can any one of more experience advise me how to save the bees when taking the nests from trees?—W. J. B., *Norfolk.*

CURRENT PRICES FOR HONEY.

[3774.] With reference to Mr. W. Woodley's remarks in B.B.J. (page 331) on current prices for honey, may I suggest that Mr. Woodley, and other contributors to the JOURNAL who are large honey-producers, should let the readers know what price they are getting for their produce at different seasons of the year?

I think if Mr. Woodley would let those of us who are bee-keepers on a small scale know what price he gets per dozen for first class sections and 1-lb. jars, to the consumer and also to the grocer, it would be a guide to, and also in the interests of, a great many bee-keepers who only have a few dozens to sell. Let our bee-keepers who go in for honey producing on a large scale do this, and it will be one step forward in establishing a uniform price for British honey.—W. W., *Hull.*

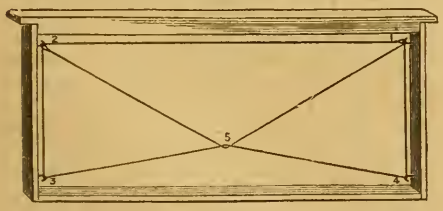
Queries and Replies.

[2278.] *Starting a Bee-Farm.*—We had at the beginning of this season twelve stocks of bees in frame-hives; at the present time, what with swarms and driven bees, we have more than forty colonies. We have hired half an acre of land on which to place them, and propose to sow it with barley and Dutch clover. 1. Can you advise us of anything better? 2. How many hives would half an acre conveniently accommodate (the land is not near houses, being about 200 yards from the nearest)? Would it accommodate 100 or 150? 3. Where can we purchase a "Reitsch" foundation press, as mentioned in your reply to "Vanity" last week?—CONSTANT READER, *Bedfordshire.*

REPLY.—1. Of course, the barley will be sown along with clover and will monopolise the ground for the first season, but the clover will later on form a good "ground carpet" for the apiary and afford some bee-forage. You must not, however, count very much on half an acre of white clover showing an appreciable advantage to a large apiary unless supplemented by plenty of forage-ground beyond the home crop. 2. Half an acre will give ample standing room for the number of hives named, if the honey-producing flowers in the district around are sufficiently plentiful to give the bees profitable work on them. 3. We only know of one dealer who stocks the "Reitsch" press, viz., Chas. Redshaw, South Wigston, near Leicester.

[2279.] *Wiring Frames.*—Can you tell me how to wire frames that have a saw-cut through top-bar? All the illustrations I have seen show the wire passed through the top-bar, and this is not suitable for those with a saw-cut.—TOM NICHOLLS, *Llansamlet, September* 19.

REPLY.—The following "cut" shows a wired frame without the saw kerf in top-bar.



The method of wiring by means of wire nails driven through side bars of frame and bent to form a hook will be readily understood from sketch.

[2280.] *Transferring Old Combs from Skeps.*—1. In May last I bought a swarm of bees and duly hived them. When the body box seemed full I put on a rack of sections, but w en the honey-flow seemed dwindling I examined and found a little honey in sections, so I took them off. I wanted to examine the body box below, but found everything about it thickly glued with propolis, making it very difficult to move frames, &c. 1. Should I leave it as now until spring, or examine at once and remove all combs the bees cannot cover? 2. I tried my hand at driving a skep which had not been touched for at least four years, but, owing to the way the combs were joined, I could not get all the bees out at one attempt. Eventually, by cutting the straw to pieces, I found the queen and got her to the bees. I then tied, in alternate frames, the old combs with brood, the other frames having starters of foundation. The bees, however, have been joining the combs together, and I cannot get them to make them regular at all. At one end they have joined the combs to the hive side. How can that be prevented? When I examined the frames to-day I found no brood whatever in combs. Can the queen be there with no brood now? None of the combs are built right down, and there is only a little honey near the tops. I am still feeding. 3. What else should I do? Previous to my attempt at driving my No. 2 skep I took my first swarm off the trunk of an elm tree 20 ft. or more from the ground. Whether it was a stray swarm or from my No. 2 stock (the one I afterwards moved and transferred) I don't know, but when driving I saw a recently uncapped queen-cell. As I had plenty of the old brood-comb left over from No. 2 skep, I tied that in frames and gave them to the swarm, but these combs seem in much the same state as the others transferred, except that there is more honey in them. I did not examine three frames which are stuck together with brace-combs, but in the others there was no brood. I am feeding this, too. 4. Should I stop feeding in October, or what shall I do? Do you think the queen is there? 5. In another hive (not mine) a stray swarm was put in an old frame-hive (no other bees being near). They have worked well lately, but on examining I cannot find the queen. Should a queen be introduced now or in the spring? How can one be certain about the queen being wanting? Can bees winter if queenless?—D. C., *Tooting.*

REPLY.—1. It is the best practice to straighten up hives and contract the number of frames before packing up for winter. 2 and 3. Your queries prove the usefulness of our repeated advice never to transfer old combs from skeps to frame-hives. When setting up a new hive it is absolute folly to have the frames occupied with old patched-up combs from a skep. Your best course is to get rid of the faulty combs gradually by inserting a full sheet of foundation in centre of brood-nest in April next, and a second one ten days later. 4. Stop feeding when the bees have sufficient stores for winter, not before. 5. If you are certain the stock is queenless, it should be requeened at once.

[2281.] *A Beginner's Queries.—Bees and Arsenic.*—1. Could bees be kept with a prospect of success in a mining district where there is a good deal of arsenic in the atmosphere? 2. I have two skeps of driven (condemned) bees, and no honey for them to winter on. I am feeding them on syrup, but do not know in what proportion to give it them. Ought I to put them in a frame-hive, with a sheet or two of foundation in it to cluster on? Or should I keep them in skeps through winter, and transfer in the early spring? I may say I have the "Bee-keepers' Guide Book," and quite follow the instructions referring to feeding and wintering bees in frame-hives, but I cannot gather how to deal with honeyless bees in skeps through the winter. 3. In the spring ought most of the "metal ends" of every other frame to be slipped back, so as to prevent production of drone-brood? 4. How can I be put on the correct lines for studying for "experts' examination"? How is this done?—R. D. C., *Cornwall, September* 18.

Reply.—1. We should scarcely hope that bees could do well in such a district. 2. If the driven bees are combless and foodless, the chances of their wintering safely are very remote. Bees, however, will winter quite as well on good sugar-syrup as on honey, and if a few combs were available, you might go on feeding as per "Guide Book." 3. The narrow spacing of frames is intended only to prevent the production of drone comb, and has no bearing upon brood-production after the combs are built. 4. Write the secretary of your county association as to experts' examinations.

[2282.] *Heather Honey for Showing.*—1. Can you tell me whether air-bubbles in heather honey are any detriment at shows, and if their presence would cost the loss of marks? After trying all the means I can think of to remove them, I have failed entirely. The honey has been heated as is usual with clover honey, but this only reduces the size of the air-bubbles and increases the number after raising it to 160 deg. Fahr. 2. Also kindly say if when a schedule simply states "heather honey" (as in that of the "Royal" Show, for instance) it means the honey to be sent in granulated condition or reduced to its natural semi-liquid state? I think it looks better and, in my opinion, tastes better when granulated.—Enquirer, *Staffs, September* 22.

Reply.—1. Yes; air-bubbles in an exhibit of liquid honey constitute a fault, and should be got rid of. 2. Heather honey of current year should not be granulated when staged at a show.

METEOROLOGICAL

A CORRECTION.

At Duddington, Stamford, Northants, for the week ending September 9, the mean temp., viz., 62·6 deg. (not 62·7 deg. as sent in error), was + 4·5 deg., and the rainfall, viz., 2·06 in., was + 1·51 in. The rainfall, August 27 to September 9, viz., 2·32 in., is + 1·24 in., and the mean temp., viz., 62·1 deg., is + 3·5 deg. The rainfall, January 1 to September 9, viz., 14·03 in., is − 2·63 in.

In the last two paragraphs of my observations in the B.J. for September 14 (p. 366), "the month's rainfall" referred to that of August, which amounted to 0·84 in., and was − 1·40 in., also "that for the year," in the last paragraph, referred to that January to August, viz., 11·88 in., which is − 3·92 in.

Observations taken at Ketton, Stamford, Rutland, for the Week ending Sept. 23, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.	Wind.
Sept. 17..	29·77	54·8	67	51	16	58·6	·01	SW
,, 18..	29·64	55·0	61	49	12	54·7	·01	SW
,, 19..	29·69	54·9	65	50	15	57·1	·26	SW
,, 20..	29·54	51·3	58	46	12	51·7	·02	W
,, 21..	29·85	54·5	62	42	20	51·5	·13	W
,, 22..	29·61	51·5	57	47	10	51·8	—	NW
,, 23..	29·91	53·9	62	42	20	51·5	·15	SW
Means ..	29·72	53·7	61·7	46·7	15·0	53·9	·58*	—

* Total, ·58 in.

Mean vapour tension, 0·287 in.; mean relative humidity, 68 per cent.; mean temp. of the dew point, 43°·6. The rainfall, viz., ·58 in., = 13,121·34 gallons, or 58·58 tons to the acre, or 2·90 lb. to the square foot.

Fred. Coventry.

The Vale, Ketton, Stamford, September 24.

Echoes from the Hives.

Lynn, Norfolk, August 28, 1899.—This is my first year as a bee-keeper, and I have eighteen stocks, all in bar-frame hives. I have not taken a great deal of honey, and I now know one reason, for the bees were short of food at Whitsun. However, I have secured about 1½ cwt. of extracted honey. I was the *only* frame-hive man here until quite late this season, when I persuaded three "skeppists" to adopt frame-hives. I have shown several people how to drive a skep, and believe there will be no sulphuring this year, at least, I hope not. I often wish I could get near some experienced bee-keeper for a few lessons. My knowledge is first gained from reading, then I have to experiment; and as people sometimes come to me for advice about bees, I would like to learn more. I am intensely interested in bee-keeping, and rather pride myself that I can manage the bees without much trouble to myself or annoyance to others. I belong to the Norfolk B.K.A., but am too far off for a visit of their expert. This seems to be a good part

for bees; there are several "skeppists," besides stocks in trees and numerous nests of bumble bees.—W. J. B.

BEES IN CO. KILKENNY.

I beg to forward you a cutting from the *Irish Times* of the 13th inst., and hope you will kindly give it a place in our B.B.J., as it may at least interest Irish readers who do not see the paper named above.—M. K, *Piltown, co. Kilkenny, February* 15.

[The press cutting forwarded reads as follows.—EDS.]

"PRINCE CHRISTIAN VICTOR AND IRISH INDUSTRIES.

"(*To the Editor of the 'Irish Times.'*)

"SIR,—An association for the promotion of bee culture has been lately formed in this locality under the auspices of the noble house of Bessborough, who are ever anxious to develop cottage industries.

"At the Iverk Farming Society Show held at Bessborough Park on the 5th inst., there was an exhibition of honey. The bee tent was visited by his Highness Prince Christian Victor, amongst others who were of the house party at Bessborough. He was greatly pleased, and expressed a desire to purchase honey from each exhibitor.

"I mentioned his wish to them, and as Irishmenlike, they all desired to present his Highness with samples of their honey, and at their request the following letter was sent along with their gift:—

"'Piltown, September 6, 1899.

"'MAY IT PLEASE YOUR HIGHNESS,—We, as members of the Iverk Bee-keepers' Association, are delighted to see the grandson of our Queen amongst us, we offer you a real Irish "Cead mille failthe," and hope you will soon again repeat your visit.

"'Will you do us the honour of accepting a few samples of our honey, which we tender to your Highness with every expression of a sincere and loyal welcome.—Signed, on behalf of the Iverk Bee-keepers' Association,

"'PETER WALSH, Hon. Sec.'

"The following gracious reply was received:—

"'Bessborough, Piltown, Ireland.

"'DEAR MR. WALSH,—I have to thank you again for your gift to me of some of your own honey, and may I ask you to convey my thanks to your Association for also sending me some samples of their honey.

"'It has been a great pleasure to me to be able to visit this part of the country through the kindness of Lord and Lady Duncannon, and I trust that if it be my good fortune to visit Bessborough again I shall find your Association in a still more flourishing condition.

"'I am sure bee-keeping is an industry well suited to cottage life, and I hope that through the help of your society it may take a firm hold in this neighbourhood.

"'Pray accept once more my thanks for your own personal gift, as well as for that of the Association.—Yours truly,

"'CHRISTIAN VICTOR OF SCHLESWIG-HOLSTEIN.'

"As his Highness takes such a lively interest in Irish industries it is to be hoped that his anticipation will be fulfilled, and that the vast quantity of Irish honey which was heretofore going to waste will be utilised, and that the British consumers will fully appreciate the difference between pure Irish honey and the spurious article that is imported under the name of honey.—Yours, &c.,

"B. WALSH,

"Hon. Sec. Iverk Bee-keepers' Association,

"Fanningstown, Piltown.

"September 9, 1899."

Bee Shows to Come.

September 25 to October 21, at St. James' Hall, Manchester. Show of British honey, honey-vinegar, and mead, under the auspices of the Lancashire Bee-keepers' Association, at the third British and Colonial Industrial Exhibition.

September 30, at Jedburgh.—Annual Show of the Roxburghshire B.K.A., in the Church Hall, Queen-street. Twenty-five classes for honey, &c.

September 30 to October 7 at the Agricultural Hall, London.—Honey Show in connection with the fourth Annual Exhibition of the Grocery and Kindred Trades. Classes (open to master grocers only) for comb-honey in sections and for extracted honey.

October 17 to 20 at the Agricultural Hall, London.—Show of Honey and Bee-produce in connection with the British Dairy Farmers' Association. Numerous and liberal prizes for honey, &c.

November 16. At the Town Hall, Ludlow. Honey Show in connection with the Chrysanthemum and Fruit Society's Exhibition. Two open classes for honey (Sixes). Schedules, &c., from John Palmer, 17, Brand-lane, Ludlow. **Entries close November 7.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

*** *We have in type an important paper, read at the late meeting of the British Association at Dover, on the subject of "The Crystallisation of Beeswax and its Influence on the Cells of Bees." Its publication is, however, unavoidably deferred till next week for the preparation of the necessary illustrations.*

R. E. P. (Birmingham).—The Hon. Sec. of the Warwickshire B.K.A. is Mr. J. Noble Bower, Knowle.

A "BEE JOURNAL" READER (Essex).—Honey is similar in quality to the inferior stuff gathered so plentifully last season.

FOLKESTONE.—*Bee Parasites.*—Surely you must have failed to read our issue of September 29 (page 388) or that of December 22 (page 503) last year? In these numbers the insects you send (*Braula cœca*, or blind louse) are illustrated and described at length.

GUARDIAN (Oxon).—*Suspected Comb.*—A very slight inspection of comb sent showed us

the true characteristics of foul brood. We cannot understand your failing to detect it from description in "Guide Book."

B. A. (Bristol).—*Honey Samples.*—1. Honey sent is very good in colour, but its strong flavour of "peppermint" leads us to imagine the bottle containing sample must have held essence of peppermint. It is too pronounced to come from lime bloom.

H. C. W. (Notts).—*Queen Found Dead in Introducing Cage.*—1. The queen has the appearance of having been starved to death. It was unfortunate not to have made sure the stock was not queenless before trying to introduce the stranger. 2. Mr. Geo. Hayes, Hon. Sec. Notts B.K.A., 14, Mona-street, Beeston, will no doubt supply the information needed if written to.

W. G. (Rastrick).—Comb is affected with foul brood.

I. S. E. S. (Hythe).—Write to Mr. H. W. Brice, Hon. Sec. Kent and Sussex B.K.A., 100, Brigstock-road, Thornton Heath.

C. Chetleburgh (Norwich).—*Supering Bees in August.*—1. Apart from the fact of June swarms not being always able to store surplus honey their first season, it is altogether too late to think of supering a swarm in a skep in August. The bell-glass should therefore be removed at once. 2. You can only know whether or not the swarm has sufficient stores for winter by lifting it, and so gauging the approximate weight. If it is now less than 25 lb. gross, the bees should be fed till it attains that weight. Move the bees nearer the house prepared for them a yard at a time each day on which they are flying. Three lifts will thus suffice.

Miss Thomas (Surrey).—*Earwigs in Hives.*—The only harm earwigs do about hive-roofs is to create more or less dirt about them. The best way of getting rid of them is to brush the whole family into a vessel of water and dispose of them in any way preferred.

J. Y. (Ballantrae, N.B.).—*Source of Honey.*—As is usual when packed sparingly and sent by parcels post your letter and the comb of section had to be literally "dug out" of wrapping, smashed comb, and running honey, a process not tending to sweeten editorial temper. The honey is from bean blossom with some heather in it, and though not of high class we cannot give it so bad a character as you do. The quality is fair.

J. T. A. (Thame).—*Using Honey as Bee-food.*—We cannot state the "proper proportion" of water required for thinning down honey to make it suitable for bee-food, because so much depends on the specific gravity or density of the honey used. There need, however, be no difficulty if sufficient hot-water is added to reduce honey to the consistency of the ordinary sugar syrup used for feeding bees.

G. W. P. (Yeovil).—*Pea-Flour in Bee Food.*—The recipe mentioned as appearing on page 162 of "Guide Book" refers to "flour candy," not syrup-food, for bees, pea-flour not being used at all in syrup making. It is generally understood that in most districts natural pollen is obtainable in autumn. In referring to flour being worse than useless, we had in mind your having boiled it in syrup food.

L. Quayle (Glenmay).—*Exhibiting Honey.*—1. In a class for liquid honey of current year, a sample either granulated or beginning to granulate would lose points as being "out of condition." Experienced exhibitors no doubt take steps to get rid of the "cloudiness" (which is the first stage of granulation) by immersing the jars in water sufficiently warm to make the honey become clear and bright with a minimum of loss in aroma or flavour. 2. A granulated sample would stand no chance of winning in the class referred to. 3. Your former note must have missed in post.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

PURE EXTRACTED HONEY, ½ cwt. Sample 2d. What offers? V. Thring, Yeovil. 511

FEED STOCKS in three nights with my SPECIAL RAPID FEEDER, only 2s. 6d. E. Glossop, Ambergate. 509

NEW substantially-built FRAME HIVE, cost 21s. Exchange TWO BAR EXTRACTOR. Particulars, E. Glossop, Ambergate. 510

23rd YEAR.—SWARMS with reliable Queens, 5s. 6d. package free. Tested '99 Queens, 3s. 9d. delivered. Alsford, Expert, Blandford. 508

EXTRACTED ENGLISH HONEY in 28-lb. tins, 6½d. per lb.; tins free; sample 2d.; deposit system. Richard Dutton, Terling, Essex. 507

FOUR CWT. PURE EXTRACTED HONEY, 56s. per cwt. John Nightingale, Doddington, Cambs. 505

HONEY, with SKEPS of BEES, FOR SALE. Healthy. Offers. Hewett, Home Farm, Ramsey, Harwich. 504

"REAL GLENLIVET" HEATHER HONEY, 1lb. sections, 1s. Carriage paid on quantity. Macdonald, Morinsh, Glenlivet. 503

WHAT OFFERS for 2 60-lb. Tins of last year's dark Honey? John Walton, Honey Cott, Weston Leamington. 502

PURE ENGLISH HONEY (Clover and Sainfoin), ½-cwt. 14s.; 12-lb tins 6s. 6d.; tins and crates free. Samples 2d. H. May, Kingston, Tetsworth. 501

LANTERN SLIDES on BEES and BEE CULTURE. List post free from Expert, Brant Broughton, Newark.

WANTED, HONEY for mead making; must be cheap. Samples and price to Pratt, Staffhurst-Wood, Edenbridge, Kent. 517

NINE LOTS of BEES FOR SALE in Frame Hives; 100 1-lb. Bottles Extracted Honey. R. Shuker, Shawbury, Salop. 515

HONEY, finest light colour (fresh) Extracted 56s. per cwt. in ½-cwt. tins; package and tins free; samples 2d. A. E. Rowell, Ashdon, Saffron Walden. 514

Editorial, Notices, &c.

HONEY AND HONEY PRODUCTS.

AT THE BRITISH AND COLONIAL INDUSTRIAL EXHIBITION, MANCHESTER.

Under the auspices of the Lancashire Bee-keepers' Association, one of the most successful and interesting exhibitions of honey and honey products was opened at the St. James's Hall, Manchester, on Monday, September 21. When one knows that only three weeks elapsed from the inception of the idea (in the minds of Mr. Baker, the manager, and Mr. F. H. Taylor, the hon.-sec. of the L.B.K.A.) to the opening of the exhibition, one is astonished that such a capital and extensive collection of the products of the apiaries of the United Kingdom could be brought together in so short space of time. From the issuing of the schedules to the show only two weeks and a single week's notice in the B.B.J., and yet eighty-eight entries were obtained, and all staged with four exceptions. We dwell on this to show what may be done where the will to work exists. To the manager, Mr. A. P. Baker, Mr. F. H. Taylor, and especially to Mr. Bertie Baker the credit is due, as it is to the stewards (Mr. W. Bradburn, Sale, and Mr. James Turner, Heaton Chapel) for their success in the arduous task of staging this trophy of the bee-industry.

No finer or better exhibition of light honey, in sections and jars, has before been seen in the North of England, and equally high praise may be given to the display of heather honey, both in sections and jars, while the dark honey shown was very good. As the exhibition is open till October 21, ample opportunities exist for a visit to this valuable object-lesson in honey production.

The judges were the Rev. J. F. Buckler, Bidston Rectory, Birkenhead, and Mr. F. H. Taylor (1st class expert, B.B.K.A.), Fallowfield, whose awards were as follows :—

Twelve 1-lb. Sections (6 entries).—1st, J. Sopp, Crowncourt, Wallingford ; 2nd, Wm. Woodley, Newbury, Berks. ; 3rd, F. Chapman, Wells, Somerset ; h.c., H. Waddington, Borobridge, Yorks.

Twelve 1-lb. Heather Sections (14 entries). —1st, H. Waddington ; 2nd, J. H. Horn, Bedale, Yorks. ; 3rd, J. Walker, Estwaite, Hawkshead ; v.h.c., Jno. Berry, Llanrwst ; T. Shaw, Landsend, near Whitby ; h.c., Dr. W. Allen, Hawkshead, Ambleside ; c., W. E. Little, Chester.

Twelve 1-lb. Jars Extracted Honey (27 entries).—1st, H. F. Beale, Andover ; 2nd, W. Patchett, Caistor, Lincs. ; 3rd, T. Blake, Stockbridge, Hants ; v.h.c., J. Sopp and J. G. S. Leigh, Broughton, Hants. ; h.c., F. Law, Pattingham, Wolverhampton ; Wm. Woodley and H. W. Seymour, Henley-on-Thames ; c., T. Richards, Gresley, Burton-on-Trent ; P. B. Gorett, St. Germans, and W. Spence, Newtown, N. Wales.

Twelve 1-lb. Jars Extracted Dark Honey (18 entries).—1st, J. Fewkes, Glen Magna, nr. Leicester ; 2nd, H. Wood, Lichfield ; 3rd, Jno. Berry ; v.h.c., J. J. Forster, Laxey, Isle of Man ; v.h.c., Mrs. E. Berry, Llanrwst ; h.c, J. Chapman, Blackpool ; c., J. Wrench, Hartford, Cheshire ; c., G. Leffs, Barrow, Cheshire.

Twelve 1-lb. Jars Extracted Heather Honey (15 entries).—1st, W. Drinkall, Clitheroe ; 2nd, W. Sproston, Slingborough, Staffordshire ; 3rd, J. Walker ; v.h.c., Dr. Allen, Hawkshead, J. H. Horn ; h.c, Jno. Berry, T. Richards ; c, T. and H. Thompson, Grafton, Yorks., W. Spence.

Honey Vinegar. — 1st, P. Scattergood, Stapleford, Notts. ; 2nd, H. W. Seymour ; 3rd, P. Scattergood.

Mead.—1st, W. Spence ; 2nd, H. W. Seymour ; 3rd, J. Berry, Banbury, and A. Hamer, Llandilo, equal.

Special Awards.—Diplomas of Merit to H. F. Beale and J. Sopp, for honey ; P. Scattergood for vinegar, and W. Spence for mead.

A special prize was given to Lancelot Quayle, Glenmay, Isle of Man, for his excellent heather honey, which arrived too late to be staged for judging.—(*Communicated*).

MIDLOTHIAN B.K.A.

ANNUAL SHOW AT EDINBURGH.

The sixth annual exhibition of the Midlothian Bee-keepers' Association was held in conjunction with that of the Royal Caledonian Horticultural Society, in the Waverley Market, Edinburgh, on September 13 and 14. Until this year the Association confined its classes to Midlothian, and held its show in connection with local flower shows in different parts of the country, and this had the effect of securing new members in districts where the show was held. It was thought, however, that it might be advantageous to hold the annual show in Edinburgh, and have most of the classes open. For a first venture the prizes were considered pretty fair when compared with the entry money, and exhibitors generally seem to have thought so, for they have supported us well. Naturally, the more support we receive the more inducements will be offered. As regards this show, clover honey was below average in quality as a whole, though some of the exhibits, both in sections and bottles, were remarkably good. Heather honey classes were strong throughout both in quality and quantity, and well-experienced exhibitors remarked that it was the best show of honey they had seen in the Waverley Market.

The awards made by Messrs. Cairns, Dundee, and J. Kerr, Dumfries, were as follows :—

MEMBERS' CLASSES.

Six 1-lb. Sections.—1st, Rev. J. W. Blake ; 2nd, A. S. Huth ; 3rd, F. Huth ; 4th, T. H. Welsh.

Six 1-lb. Sections (Heather).—1st, C. N. Craik; 2nd, A. S. Huth; 3rd, J. Clapperton.

Three 2-lb. Sections.—1st, D. Young; 2nd, C. N. Craik.

Six 1-lb. Jars Extracted Honey.—1st, Rev. J. W. Blake; 2nd, W. Smith; 3rd, W. Weir.

Three 1-lb. Jars Extracted Honey (Heather).—1st, A. S. Huth; 2nd, Rev. J. W. Blake; 3rd, W. Weir.

Non-Sectional Super (not over 10 lb.).—2nd, W. Weir.

Non-Sectional Super (Heather) (not over 10 lb.).—1st, W. Weir; 2nd, D. Young; 3rd, J. Livingstone.

Straw Super of Honey.—1st, John Thomson; 2nd, D. Young; 3rd, J. McIntyre.

OPEN CLASSES.

Display of Honey (100 to 150 lb.) in any form.—1st, J. Clark, Carnworth; 2nd, T. Pate, Milnathort; 3rd, S. Roebuck, Dumfries.

Display of Honey (40 to 50 lb.) in Jars and Sections.—1st, J. Clark; 2nd, S. Roebuck.

Twelve 1-lb. Sections.—1st, John Clark; 2nd, S. Roebuck; 3rd, A. Smith, Belses.

Twelve 1-lb. Sections (Heather).—1st, John Clark; 2nd, S. Roebuck; 3rd, C. N. Craik.

Six 1-lb. Jars Extracted Honey.—1st, R. Brindle, Newmairds; 2nd, Rev. J. W. Blake; 3rd, R. W. Clarkson, Biggar.

Six 1-lb. Jars Extracted Heather Honey.—1st, A. Muir, Kirkcowan; 2nd, Rev. J. W. Blake; 3rd, W. Weir.

Design in Honey Comb.—1st, J. Clapperton; 2nd, W. Weir.

Non-Sectional Super.—1st, D. Mitchell, Selkirk; 2nd, J. Clark; 3rd, W. Weir.

Non-Sectional Super (Heather).—1st, Thos. Pate; 2nd, C. N. Craik; 3rd, D. Mitchell.

Three 2-lb. Sections.—1st, S. Roebuck; 2nd, J. Clark.

Two Frames Comb Honey for Extracting.—1st, Thos. Pate; 2nd, J. Clark; 3rd, D. Young.

Cake of Beeswax (not under 1 lb.).—1st, Thos. Pate; 2nd, S. Roebuck; 3rd, J. Clark.

Honey Cake.—1st, Miss Roebuck; 2nd, Mrs. Weir.

Three 1-lb. Sections (Sweepstake Classes).—1st, Rev. J. W. Blake; 2nd, S. Roebuck; 3rd, W. Waldie, Jedburgh.

Three 1-lb. Jars Extracted Honey.—1st, Rev. J. W. Blake; 2nd, R. W. Clarkson; 3rd, W. Weir.

Three 1-lb. Sections Heather Honey.—1st, S. Roebuck; 2nd, C. N. Craik; 3rd, John Bell, Whin.

Three 1-lb. Bottles Extracted Heather Honey.—1st, A. Muir; 2nd, Rev. J. W. Blake; 3rd, W. Weir.

Lady Gibson-Carmichael's Medal (for most points in members' classes).—Rev. J. W. Blake.

Sunlight Soap Company's Prize (for best single exhibit in members' classes).—W. Weir.—(*Communicated.*)

BRITISH ASSOCIATION, 1899.

(Dover Meeting.) Section D. (Zoology).

Paper by Charles Dawson, F.G.S., &c., and S. A. Woodhead, B.Sc., F.C.S., &c., County Analyst E. Sussex.

THE CRYSTALLISATION* OF BEESWAX AND ITS INFLUENCE ON THE FORMATION OF THE CELLS OF BEES.

The hexagonal arrangement of the cells of bees has been generally ascribed to a structural instinct of bees; the object of this paper is now to show that the form of the bee-cell is chiefly influenced by a crystalline hexagonal formation due to the cooling of the wax.

While experimenting with waxes and resins one of us (Mr. Dawson) noticed that on cooling, the mixture had a tendency to arrange itself in hexagonal forms, from which he surmised that the outline of bee-cells might be primarily due to the natural structure produced in cooling wax.

At the instance of Mr. Woodhead, who also recognised the analytical importance of such a discovery, we agreed to work out the details together in Mr. Woodhead's laboratory at the Agricultural College, Uckfield.

It was first of all determined that, although the addition to beeswax of resinous substances gave a more pronounced and bolder outline to the crystals, no such addition to beeswax was necessary for their production.

If a thin slab of beeswax be melted in a shallow tray (measuring, say, 10 by 8 in.), which is evenly heated throughout and is then placed to cool gradually in a warm atmosphere without draught, hexagonal crystalline forms of the ordinary size of a worker-cell of the hive-bee will be seen gradually forming at the bottom of the dish, and a similar line of crystals will be seen to form on the sur-

Figs. 1-4.

face of the wax round the sides of the dish where the wax first cools, as seen in photo (fig. 4). The sides of the crystals are to

* It may be doubted whether crystallisation is the correct term to use for the formation of the hexagons referred to in this paper, but for the sake of brevity the term crystallisation is used to indicate the hexagon structure which is undoubtedly formed in cooling

be seen forming and branching out in advance of the cooling wax, and, when a portion of the wax in the centre of the dish alone remains melted, the remaining crystals form very rapidly and almost appear to flash out upon the surface.

The tray should be exactly level, and the wax about 1·5 mm. thick and of uniform depth, and the atmosphere of even temperature (say a few degrees below the melting point of the wax), otherwise the crystals will be irregular in size and shape.

It is immaterial how thin the plate of wax is, as the crystals are formed in any case, but their size is undoubtedly regulated by the thickness of the plate of wax, the rule being the thinner the plate the more minute the individual crystal.

The same result may be obtained on a much smaller scale, so as to produce only one or two hexagonal forms; but the operator will then find that the difficulty lies in the rapid cooling at the sides of so small a mass of wax (fig. 5).

Fig. 5.

The explanation of the formation of these crystalline bodies is as follows:—On cooling, the wax at first forms into nuclei of nearly equal size. On the shrinking of the wax by further cooling, these nuclei or spheroids are pressed together, forming planes at their points of contact. Should the wax be rapidly chilled before these spheroidal bodies are formed to their full extent, they are then prevented from coming into contact one with another by the intervening nebulous masses of "uncentralised" particles of wax.* In this state the nuclei appear when cold as solid circular bodies.

The crystals appear very distinctly above and below the surface while the wax is cooling. When it is actually solid, their forms are often very indistinctly seen or may be altogether invisible, but they are none the less present.

The bases of these crystals, which lie midway between those visible at the top and those at the bottom, are pointed and are arranged so that the point of the base of the upper crystal coincides with the points of contact of the lower crystals, as in the honeycomb.

* It would appear by microscopic examination that these particles are also smaller nuclei which become absorbed in the larger. They also, like the larger, assume hexagonal forms.

These bases can be observed by making a very thin microscopic section (see illustrations, figs. 1, 2, 3), but several hundred sections had to be examined before they were made out with certainty.

When a small amount of resin and turpentine is added to beeswax and melted, and the mixture is allowed to get cold, the outlines of the planes of contact on the crystals are more distinct and are to be seen raised upon the surface. Under these circumstances, they may be easily rubbed with blacklead, which still further increases their visibility.

Our chief experiment was next to put our theory to a practical test and observe in what manner the bees would deal with a cast sheet of pure beeswax, which, when viewed by a side light, distinctly showed traces of these crystals over its surface.

Before introducing it to the bees we had traced upon it with vermilion a group of the crystals which appeared near the centre of the plate.* This was then photographed (see fig. 5), after which the wax plate was placed in an observatory-hive on a bar-frame. The bees soon started upon it, proceeding to excavate round hollows in the centres of the crystals, at the edges of the plate, pushing out on all sides the *débris* around the edge of each excavation. When they reached the planes of contact of the crystals, either on feeling the minutely-raised edges on the surface, or more probably on feeling the increased density of the wax,† the bees determined the limits of their excavation; and it was then discovered by us that the bases of these crystals were three-sided, in the usual form of a bee cell. Meanwhile a similar process was going on in the cells which lay as nearly as possible in the same irregular wavy line, but the work on one side of the sheet was sometimes considerably more advanced than on the other, the excavation being brought three or four more rows of cells nearer the centre on one side than the other.

Portions of the *débris* taken from the centre of the crystal were now kneaded up by the bees into a kind of froth and placed above the lines of pressure or margins of the crystals, the residue of the *débris* being put aside for future use.

The portions placed on the margins of the crystals speedily adhered and solidified. Another layer was then added by the bees, and this process was repeated, thus forming a series of strata (which may be noticed under a magnifying glass on the sides of the complete cells), the bees planing and polishing the inner surfaces of the cells upwards from the base, taking as guides the planes and angles of the crystals.

* Another group we blackleaded with similar results.

† There are two reasons for the density of the wax, namely, the outer edges of the nebulæ are composed of smaller particles, and are, therefore, more compact; also the pressure brought to bear on the planes of contact renders the sides of the bodies still more compact.

In the places where we had traced the outlines of the crystals in vermilion the bases of the cells were to be distinctly seen formed upon the vermilion outlines. Similar experiments have been repeatedly tried with the same results.*

In places where the wax plate had been of uneven depth, or had cooled too rapidly, the comb presented an irregular appearance, following in form the irregular crystalline bases beneath, the result being very distinctive and striking to the practised eye of an apiarist.

When in a natural state the newly secreted wax is formed into a small pendent plate, it is probable that the bees crowding around produce the required amount of heat to soften or to keep soft the newly deposited wax, and allow it to cool very gradually when a few crystalline bodies form within the plate, and these must be soon afterwards hollowed out and built upon. The same process takes place repeatedly against the sides of newly-formed hexagons, until the comb is large enough to suit the requirements of the bees; the sizes of the cells being partly influenced and regulated as above stated by the rapidity or otherwise of the process of cooling of the wax and so indirectly, as previously mentioned, by the thickness of the cooling mass. The size of the crystals may be varied experimentally from those of nearly an inch across to others of microscopic dimensions.

At the time of writing this paper we have not yet succeeded in casting a large sheet of wax containing groups or rows of crystals so perfectly regular as those which are to be seen in a natural comb, or in a comb built upon the ordinary manufactured comb-foundation. We do not pretend, even after many experiments, to be able to cast a foundation of crystals with the same comparative exactitude as those made by a bee. Although we have little doubt that we may soon be able to do so, we cannot expect, in a few limited experiments, to compete with the bee, whose seeming aptitude is probably the outcome of ages of natural selection and adaptation. Yet the bees still prefer to adopt our less regular groups or rows of crystals as bases to work upon, rather than pull our wax plates to pieces so as to recast the wax with greater regularity.

A further outcome of our discoveries is that paraffin wax and adulterated beeswax do not assume the same crystalline form as pure beeswax. We have succeeded in producing a variety of characteristic forms of these crystalline bodies by the treatment of certain waxes with other fats, oils, or waxes. The analytical value of these experiments we may hope to prove to be very great both directly and indirectly, and to open up an immense field of crystallography in its relation to oils, fats, and waxes.

It has also naturally occurred to our minds that the formation of certain intricate structures by other insects may be also more or less directly due to crystalline action.*

[Whatever may be the final outcome of Messrs. Dawson and Woodhead's further experiments in the line recorded above, their paper is full of interest for bee-keepers, notwithstanding the difficulty of believing that the startling results, seen in the photos from which the illustrations (crude though they must necessarily be) were reproduced, can be possible!

We have forwarded "advance proofs" of the paper and illustrations to our senior editor in California, and shall await Mr. Cowan's views, along with those of such of our scientific readers as may be disposed to express their opinion in print. Meantime, we have permission to state that the specimens of beeswax, from which the photos were taken, may be inspected at the Laboratory of the Agricultural College, Uckfield, Sussex.

The writers of the paper, however, desire us to say that while welcoming any expression of opinion regarding the experiments detailed above, they cannot undertake to enter into any desultory discussion regarding them.

No doubt some readers will see, along with ourselves, serious stumbling blocks in the way of accepting the wonderful results recorded, so far as their not being capable of some other explanation than the one given. But we need not here enumerate the strong points against the "case" as presented till sufficient time has been allowed for further consideration.—EDS.]

* A plate of wax formed by compression, and in which no crystals had formed, was inserted in the hive: this the bees gnawed to pieces and (?) utilised elsewhere

* The cells of wasps, though hexagonal, have not the prismatic base of the bee-cell. Analysis shows that they contain typical wax crystals.

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Mr. Bradburn, whose small apiary is seen on next page, with himself in the background, is a recruit to the constantly increasing army of bee-keepers who may truly be termed workers. All such are helpful to the industry, as allowing their interest in the craft to extend beyond their own apiaries, first, by assisting the County B.K.A., and second, by qualifying themselves for giving reliable help and advice to others. Regarding himself he writes:—

"I commenced bee-keeping in 1894, and, unfortunately, made a rather bad start. I knew nothing whatever about bees at the time, and cannot say exactly what induced me to begin, but I purchased two stocks in 'Cowan' hives in October of that year. This was, of course, the wrong time to begin, with no knowledge of how to prepare the bees for winter, and in consequence of my doing nothing I lost them both before the following

spring. I knew of no bee-keepers in the district, indeed, there were only one or two who kept bees then, but now there are a good many. However, I had the good fortune to be introduced to the enthusiastic hon. sec. of the Lancashire B.K.A., Mr. F. H. Taylor, of Fallowfield, and as I joined the Association, my difficulties were then over. Mr. Taylor invited me to his apiary in the spring of '95, and, in watching him manipulating frame-hives, I learned more in an hour or two than in the whole of the previous winter by studying books. I attended all the lectures and demonstrations I possibly could and resolved on a fresh start. I burned all the old combs and quilts in my bee-less hives and after thoroughly disinfecting the hives, scalded them. I then bought two skeps and had the bees and combs transferred to frame-hives, and they gave me about 30 lb. of surplus honey that year. In the following years of '96 and '97 I got 100 lb. and 140 lb. of honey respectively from my two hives.

"In the autumn of the year my apiary had increased to six stocks. This is about as many as I am able to manage well with my limited time. I do not believe in having too many stocks and neglecting them. I have not had a swarm from a frame-hive yet, as I prevent this by putting on the supers in time. I also believe in having young queens and fresh brood, and make a point of re-queening three stocks each year, so that I never keep a queen over two seasons. The combs are also often renewed, and the hives scrubbed and painted every spring.

"I would advise beginners to find out some bee-keeper before starting, and then join the County Association, procure the 'Guide Book,' and take in the B.B.J. and *Record*. It is to these that I owe my successful management now. I also advise them to commence in the spring, either with a six or eight frame stock from a reliable dealer, or an early swarm.

"Sale, although in the county of Chester, is a residential suburb of Manchester, being only five and a half miles from the centre of the city. It is a very fair one for honey. Of course, 1898 was a complete failure here, as it was nearly everywhere, for we got nothing but honey-dew. We have not very much clover in the district, but, being a great place for market gardening, there is a large quantity of flowers and fruit bloom. We have also a good number of ornamental trees, such as sycamores and limes.

"I can sell retail all the honey I can procure, and get orders from 1 lb. up to 40 lb. at 1s. per 1-lb. jar. I am also happy to say there is no foul brood yet known in the district.

"When I commenced there were only five bee-keepers in the district; and up the present we have increased fourfold, and are still increasing. In June, 1897, I obtained my 3rd Class Expert's Certificate at the

MR. W. BRADBURN'S APIARY, SALE, CHESHIRE.

'Royal' Show, Manchester, of which I am very proud.

"I serve on the committee of the newly-formed Cheshire B.K.A., and am local hon. sec. for the Sale and Brooklands district, and do my best to promote membership. I am only too pleased to give bee-keepers—especially beginners—any assistance they require, as I have always done since I got through my own difficulties.

"As for the pleasures and profits of bee-keeping, I know of no other 'hobby' to equal it. Then it brings many other things to your knowledge, such as the fertilisation by bees of flowers and fruit; pollen and its uses; I have watched the bees for hours bringing in their loads of pollen! One also takes more interest in the seasons, especially spring and summer; and in the different kinds of flowers and trees. I never cared or knew which was a sycamore or lime tree before becoming a bee-man, but the sound of the bees' hum in those trees is music to us, and the delight of watching the bees working hard in the flowers bringing in the honey is far more than the money value of our harvest. I also think that bee-keeping teaches patience and hopefulness, and none can doubt the all-round willingness of bee-men to assist each other—at least, these are the lessons I have learned from it."

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

NOTES BY THE WAY.

[3775.] The honey season of '99 seems to have satisfied the great majority of bee-keepers, so far as the crop is concerned, and now it becomes a primary part of the business to dispose of our produce. While the shelves of the dry cupboard are bending with its weight some of the comb honey is already, I hear, showing signs of incipient granulation. This, with Michaelmas rents due, makes it imperative that some of the crop must be sold, and in many instances this appears a somewhat difficult job to the out-of-the-way bee-keeper, who has no friends in trade or customers he or they can rely on. Now it is just here that the Association should step in and place the producer in touch with the merchant. I know there are the pages of the local Press ever ready to advertise in; also bee journals and other papers which insert advertisements at low rates. Our friend who had offered him twenty tons the other week, *vide* B.B.J. (page 380), shows either that bee-keeping is taking hold or that we have had an extra good season; but in any case we are rapidly on the increase, as a craft.

The large supply of good honey this year ought to act as an incentive in working up bee-keepers, who have honey to sell, to the important fact that either the market must be extended or we must take the inevitable "slump" in prices with a good grace, and be thankful for small mercies.

Market Prices.—I have before me, as I write, a whole foolscap page of market prices of fruit, vegetables, cut flowers, and even pot-plants; with prices in columns for two or three London markets and most of the large provincial towns. This was my idea explained some time ago this season, and also in previous years. I do not expect any one individual to fix the price or corner the market. Neither did I ever expect that honey would, or ought to be, all of one price, or even an approximate level price, even in the same county, because there are as many kinds and qualities of honey as in most other articles of commerce. The advertisement pages of B.B.J. tell the tale every week, some demanding 5d., others 7d. per lb. for extracted honey in bulk; while another asks 8d. for 1-lb. sections in tin cases costing 2d. each. Now, if the honey is good and the sections well filled, surely it ought not to require a second advertisement to sell comb honey at what is practically 6d. per lb.? Another advertises sections of comb honey at a price without saying whether they are glazed or cased or not; this involves a lot of correspondence. It may be that the few dozens on offer are advertiser's whole crop, and that the sections will vary in weight from 17 oz. down to 11 oz. or 12 oz. per section, and it is just here that the difficulty arises in buying from advertisers. Sections ought to be so carefully graded that every section in the dozen or gross is as nearly equal in quality and close approximation of weight as possible. This will have to be done if we are going to make progress. Many American bee-keepers use mechanical "cleaners" for preparing their sections for market and adopt the "no-drip cases" for transit. This arrangement prevents any "drip" of honey from a broken section damaging the layers below. I have written on this subject frequently, and the more I inquire into the matter the more convinced am I that we Britishers are much behind in preparing our commodities for market; possibly necessity was the mother that brought forth the "inventions" for improving these things elsewhere, but the fact remains that they have stolen a long march on us in these things, and, in consequence, command the best market prices for their painstaking labours.

Prices of Sections.—Your correspondent, "W. W., *Hull*" (3774, page 384), asks me to state "what prices I am getting per dozen for first-class sections and 1-lb. jars?" In

reply, let me say over again that all my sections are carefully graded, and clean as hands and care can make them. Those of the finest quality and colour (white clover and sainfoin), well filled and sealed (except cells next to the woodwork), with combs built out and attached to the wood of section ; such form our first grade or "selected quality." These we glaze in lace paper and pay carriage to London or other places of about equal distance at 10s. per dozen ; the next, or second grade, at 9s. ; and all below that we just sell for what they are worth—say 7s. 6d. to 8s. per dozen. We rarely have an inquiry for unglazed sections ; and "glazing" means a big job with our two large apiaries ; but it pays ; and my good wife, who does all the glazing, is not afraid of work, especially if it brings grist to the mill. I may add that if we are selling to wholesale men to sell to retailers we make an abatement in prices.

Now, having given some idea of my prices for sections, may I ask : what are others realising for their honey this season ? Where is our old friend, Allen Sharp, and how is he faring ?—W. Woodley, *Beedon, Newbury.*

THE LATE FLOWERING LIME.

TILIA PETIOLARIS.

[3776.] Our attention has been called to an article on *Tilia petiolaris* which was printed in your issue of the 28th ult. (page 382), to which you add an editorial foot-note.

We wish to draw your attention to the fact that we did not, in writing to our correspondent, "J.C., of Bidston," say that *Tilia petiolaris* and *Tilia variegata* were synonymous, but that *Tilia petiolaris* was synonymous with *T. alba pendula.* We are well acquainted with both varieties, and we may also say that we have the authority of so eminent a botanist as Mr. Nicholson, of Kew, to corroborate our statement.

We shall be glad if you will kindly have this correction made in your paper, as it would make it appear that we were giving advice which was not correct.—Dicksons, Limited, *Chester, October* 2.

[Messrs. Dicksons are perfectly right in their statement that they made no mention of *T. variegata*, and our own shortcoming goes no further than coupling the names of Mr. Geo. Rose and Messrs. Dicksons together. What we intended to convey was that Mr. Rose appeared to be in the wrong in declaring that *T. petiolaris* and *T. pendula* were synonymous (*alba* referring only to colour), and Messrs. Dicksons were equally wrong so far as "*petiolaris*" and "*pendula*" being synonymous terms in connection with the Lime.

Having said this much, we must mention that a printer's error on p. 382 requires correcting. The fifth line of our foot-note should read : "*T. pendula*" (not *T. petiolaris*) or "*T. variegata.*"

On the other hand, if it is made certain that *T. petiolaris* is really synonymous with *T. alba pendula*, it becomes obvious that Messrs. Dicksons are able to supply the early flowering lime named by Mr. Reid on page 361 of our issue of September 14. And we are very pleased to make any necessary correction that tends to establish the fact.—Eds.]

[3777.] I am told that at Penfield Hall, Petham, Canterbury, there are some very beautiful lime trees of a particular kind, but whether *T. petiolaris* my informant cannot say. If some observant bee-keeper near there could inquire and either send or bring some of the pressed foliage and seed vessels to the *Conversazione* at Jermyn-street on October 19, it might assist our present inquiry. We look upon the lime as a most important source of autumn food supply, especially to south country apiaries, and to elucidate the question recently raised, a well-known bee-keeper and Middlesex horticulturist promises to bring specimens of different lime foliage to the coming *Conversazione.* This, I hope, will beget a profitable discussion. He tells me, in wet seasons, he has seen the bees fall intoxicated by thousands under a special variety of lime tree in his grounds. In one catalogue I notice eight different varieties, but not *petiolaris.* —E. D. T., *Eynsford, Kent, October* 2.

A PAYING SWARM.

ENGLISH SWARMS IN SCOTLAND.

Over 200 lb. Surplus from a June Swarm.

[3778.] For a good many years now I have regularly had a few English swarms, and, as already recorded in your pages, they have done invariably well as swarms the first season and as stocks in the following years. The largest surplus obtained from any in the past was forty-two, sixty, and eighty-two sections. This year, however, I have beaten the record in my own experience in either stocks or swarms. You will be able to put me right if I make the statement a little wider, and say that I have established a record for a swarm. I had this one, weighing only 4 lb. (only 3 lb. 12 oz. net weight on arrival), and costing me, with carriage, just 17s. The swarm reached me on June 2, and I gave the bees 6 lb. of sugar, made into syrup, the first week after hiving, as the weather was unpropitious. Well, this swarm has given me 181 well-finished sections, twelve others fairly well drawn out, and six spoiled with drone-brood. I also took from it, in addition, three heavy frames of honey for driven bees. Here we have over 200 lb. surplus honey, and I left nine well-filled standard frames in the hive for the bees to winter on.

Now, Messrs. Editors, don't you think Glenlivet (Banffshire, N.B.) may be put along-

side Glenmay (Isle of Man) as a bee district? We have no fruit and no limes, and the only sources of supply are white clover (which was abundant this year) and heather, which in my experience never yielded better, though it fell off suddenly and unexpectedly, owing probably to the excessive drought.—D. M. M., *Banffshire, N.B., September* 30.

[Without being able to say what is the "record" weight of surplus hitherto got from a swarm of the current year, or even comparing Glenlivet with Glenmay (for comparisons are supposed to be always "ojus," you know), we congratulate our correspondent, "D. M. M.," equally with Mr. Lancelot Quayle, as the champion producers from a single stock and from a single swarm of bees, so far as we know at present in this kingdom. Such splendid results as they have this season secured are a credit to the respective bees, districts, and bee-keepers alike, and all will admit that they will take a good deal of beating.—EDS.]

SUPPORTING HONEY SHOWS.

[3779.] The Committee of the Caterham Poultry Show (October 4 and 5) very commendably introduced two classes for honey and one for wax, with fairly liberal prizes; the "rules" being those of the S.B.K.A.

I entered for all three, hoping to bring the prizes into Kent. But alas! There was only one other entry besides mine, and the classes are cancelled! Does not Mr. Jonas, the Treasurer of the B.B.K.A., reside in the Caterham Valley, and does not the Hon. Secretary of the Surrey Association live close by?

An advertisement in the B.B.J. would have brought a good many entries, and then it might have become an annual show. I hope the experiment will be tried next year with better results.—"A DISAPPOINTED KENT MAN."

BEE PARASITES.

[3780.] I think I can guess what your correspondent, "W. B. B. (*Leeds*)," means by the parasitic insect mentioned on page 376, as I, in common with others, suffer from the same annoyance. I enclose an excerpt from a very useful little book* I have which may help him to diagnose his case.—JNO. W. SPENCER, *Atworth, September* 26.

"'*Trombidiidæ* (*or Leptus*) *Autumnalis*' (*Shaw*), *commonly called the Harvest, or* '*Gooseberry Bug*.'

"Is scarcely visible to the naked eye, is reddish-yellow in colour, and possesses a well-developed sucking mouth. It lives on the foliage of gooseberry, currant, and other bushes, as well as upon cereals, grass, and herbage generally. From such places it transfers itself in late summer and autumn to the skin of human beings and animals, into which it rapidly burrows, and causes extreme irritation and itchiness, and even mild inflammation. It would appear to be chiefly, if not exclusively, when in the immature (*i.e.*, six-legged or larval) condition that the harvest bug attacks humans and animals. A weak solution of carbonate of ammonia, or benzine, will relieve the irritation, and cause the creatures to withdraw from the skin."

* "Farm and Garden Insects." By Wm. Somerville, D.Sc., B.Sc., F.R.S.E., F.L.S. Macmillan. 1897.

HONEY FROM A FARMHOUSE.

[3781.] In the latter part of July a neighbouring farmer asked me to take some bees and honey from his house. Before commencing operations I found it was a stud and plaster wall, so I smoked the bees and removed all the laths, &c, which covered the combs, and then there was a sight worth going to see! The combs were quite seven feet long and filled with splendid honey, evidently from a neighbouring field of white clover. I took several pailsfull of combs and honey. I tied all the brood in frames, and placed the hive near at hand, putting in the queen and a number of the bees. The owner wanted to have sections put on at once, but I told him if the bees managed to fill the hive they would do well. I have not examined them since, but he tells me they have been working well.

This has been a good season hereabouts for honey, both as regards quantity and quality.—E. WOODHAM, *Clavering, Newport, Essex.*

METEOROLOGICAL

OBSERVATIONS TAKEN AT KETTON, STAMFORD, RUTLAND, FOR THE WEEK ENDING SEPT. 30, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.	Wind.
Sept. 24..	29·87	53·2	60	45	15	52·1	·05	W
,, 25..	29·76	53·9	60	49	11	54·2	02	S
,, 26..	29·51	54·0	62	43	19	52·0	·01	S
,, 27..	29·46	54·2	59	43	16	50·6	·28	S
,, 28..	29·61	47·8	58	36	22	46·5	—	NW
,, 29..	29·74	42·9	57	31	26	43·4	·88	NW
,, 30..	29·24	48·2	56	43	13	49·2	—	SE
Means ..	29 60	50·6	58·9	41·4	17 4	49·7	1·24*	—

* Total, 1 24 in.

Mean vapour tension, 0·277 in.; mean relative humidity, 76 per cent.; mean temp. of the dew point, 42°·8. The week's rainfall, viz., 1·24 in., = 28,052·52 gallons, or 125·24 tons to the acre, or 6·20 lb. to the square foot. The rainfall on the 29th, viz., ·88 in., = 19,908·24 gallons, or 88·88 tons to the acre, or 4·40 lb. to the square foot. For the week ending September 23, the mean temp., viz., 53°·8 (not 53°·9 as sent in error), was − 1°·7, and the rainfall, viz., ·58 in., − ·10 in.

A sharp thunderstorm, accompanied with heavy rain, passed over the village between 4 and 5 p.m. on the 27th; one flash of lightning and a peal of thunder were almost simultaneous.

FRED. COVENTRY.

The Vale, Ketton, Stamford

ars?" in

WEATHER REPORT.

WESTBOURNE, SUSSEX.

SEPTEMBER, 1899.

Rainfall, 2·46 in.
Heaviest fall, ·82 in., on 29th.
Rain fell on 17 days. Average exactly
Maximum Temperature, 78°, on 5th.
Minimum Temperature, 34°, on 29th.
Minimum on Grass, 26°, on 29th.
Frosty Nights, 0.
Sunshine, 193·4 hrs.
Brightest day, 4th, 12·3 hours.
Sunless Days, 0.
Above average, 17·9 hours.
Mean Maximum, 63°.
Mean Minimum 48·2°.
Mean Temperature, 55·6°.
Above average, ·8°.
Maximum Barometer, 30·35°, on 11th.
Minimum Barometer, 29·11°, on 30th.

L. B. BIRKETT.

Queries and Replies.

[2283.] *Bees refusing Syrup Food*—According to the instructions you were kind enough to give me in a late issue of the B.B.J., I transferred from a dirty to a clean hive my stock of bees, and although they took the syrup from the slow feeder quickly enough, they have not touched the supply in the rapid feeder, although it has now been in the hive some days. I made the syrup from "Guide Book" recipe. Will you please help me by saying :—1. Whether I ought now to remove the syrup? 2. Can the syrup be used to make candy? (I ask this because of knowing that the bees have not the necessary amount of stores for wintering), and which recipe in "Guide Book" ought I to use; 3. How can I best remove honey from frames taken from brood box (leaving eight)—there is, perhaps, about 3 lb. in the two frames—or can I keep them for next year's use? I am anxious not to spoil the comb, as it is of this year's making.—F. E. R., *Walthamstow.*

REPLY.—1. Those to whom experience has shown the way bees sometimes need coaxing into a rapid feeder in cold weather, take special pains to make the "feeder" as snug and cosy a feeding place as possible by means of warm wrappings and warm food. This is all we can say in your case, except that we do not know what type of feeder was used, or if any care was taken in the line indicated above. See "Useful Hints" this week for further information on feeding. 2. You would, we fear, have some trouble in turning the syrup into soft candy, as the recipe to which you refer must be carefully followed to ensure success. 3. Why not utilise the honey in combs as winter stores for bees alluded to as being short? It will help to make them safe if you do not succeed in getting them to take food from the rapid feeder on a second trial.

[2284.] *Suspected Queenlessness.*—I examined two frame-hives on the 25th instant, and can find no trace of a queen in either. In both hives there were a number of sealed queen-cells. In one hive there were also unsealed royal larvæ. Both hives were fairly strong, and quite healthy. Both contained sealed and unsealed brood. In one hive there was brood only a few days old. But there were no eggs and no queen in either hive. One hive was an old stock, the other a this year's swarm from the first named. The combs in both hives are not more than a year old, and the two hives between them yielded about 50 lb. of honey in sections this year, while the combs in body-boxes are well filled with sealed stores. Can you suggest an explanation of the disappearance of both queens? If so, please advise me what to do.—C. F., *Monmouthshire, September* 27.

REPLY.—Without some particulars regarding the treatment the hives have undergone, it is impossible for us to give a reliable explanation of their present queenlessness. There is no remedy at this season but requeening with a fertile mother-bee, which can be had cheap now (see our advertisement columns).

[2285.] *Transferring Old Combs.*—The accompanying piece of comb and its contents were taken from one of my hives a few days ago. Will you please inform me as to what it is and what should be done with it as there is more like it in the hive? The bees and combs were transferred from a skep last spring, the combs being tied in frames; they have yielded about 30 lb. of honey and have now four full frames of stores and four partly full, but no signs of brood although the queen is in the hive. The bees have been very inactive of late.—A. C., *Chislehurst.*

REPLY.—Comb sent is "pollen-choked," the cells being entirely filled with old pollen. Needless to say such combs are of no more service in a hive than solid blocks of wood would be. In fact they are worse than useless, as occupying the breeding space to no purpose. We so often deprecate the practice of transferring old combs to new frame-hives that readers are under no misapprehension as to our views on this objectionable procedure and we shall welcome its early and entire discontinuance. In your case the absence of brood when examined would be more or less attributable to the old pollen-choked combs which should be removed and burnt.

[2286.] *Storing Sections and Extracted Honey.*—Not being desirous of placing my honey on the market whilst prices are low, I should feel much obliged for a few timely hints on :—1. Storing honey (especially that in sections) by means of which it will be kept in the best condition? 2. The period that sections properly treated will keep good?

3. Does extracted honey keep best in bulk or bottled?—PRUDENCE, *Kent, September* 29.

REPLY.—1. The driest and warmest place in the house should be chosen for storing sections of comb honey in. A kitchen cupboard close to the fire forms an ideal storing place, and if the sections are protected from dust, insects, mice, &c., by careful wrapping, the honey in them will usually keep liquid for over twelve months. In some seasons, however, honey in sections will granulate in spite of every care. 2. Personally we have many times had sections in the best of condition after twelve to eighteen months' storing. 3. In bulk.

[2287.] *Two Queens in a Hive.*—About a fortnight ago I joined a lot of driven bees (without a queen) to a very small nucleus from which I had taken a young queen which did not satisfy me as regards size. A week after uniting, a fresh queen was introduced, and on examining them this morning in company with a friend, we found the queen which had been introduced, also freshly deposited eggs, two sealed queen cells, and, to our surprise, another queen parading the same comb as the introduced one. It had the appearance of a newly hatched one, and we also found a queen cell which had been occupied. We removed the young one and closed the hive. The bees had plenty of syrup supplied them in rapid feeder, and had stored and partly sealed it. The two capped queen-cells were at once removed. Now why did not the introduced queen tear them down and how was it murder had not taken place?—J. J. J, *Bristol, September* 27.

REPLY.—We shall be better able to explain the "mix up" which is puzzling you on getting a reply to the following questions: (1) Are you quite certain the driven bees were queenless? And (2) is it certain that the two capped queen-cells were of recent construction?

Bee Shows to Come.

September 25 to October 21, at St. James' Hall, Manchester. Show of British honey, honey-vinegar, and mead, under the auspices of the Lancashire Bee-keepers' Association, at the third British and Colonial Industrial Exhibition.

September 30 to October 7 at the Agricultural Hall, London.—Honey Show in connection with the fourth Annual Exhibition of the Grocery and Kindred Trades.

October 17 to 20 at the Agricultural Hall, London.—Show of Honey and Bee-produce in connection with the British Dairy Farmers' Association Numerous and liberal prizes for honey, &c.

November 16. At the Town Hall, Ludlow. Honey Show in connection with the Chrysanthemum and Fruit Society's Exhibition. Two open classes for honey (Sixes). Schedules, &c., from John Palmer, 17, Brand-lane, Ludlow. **Entries close November 7.**

*** *Several communications already in type are unavoidably held over till next week.*

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

EXON (London).—*Starting Bee-keeping.*—If you can avail yourself of the help of a practical man in securing suitable stocks at this season, a start might be made at once by either purchasing from a reliable dealer, or by selecting from the stocks offered for sale in our prepaid advertisement column.

T. N. (Llansamlet).—The advertiser named is only known to us in the way of business. We are writing him with reference to your complaint.

GEO. ROSE (Liverpool).—*Price for Honey.*—We quite agree with you that it would be advantageous all round if bee-keepers who have been fortunate in securing a good harvest of honey would exercise a little patience instead of rushing their produce on the market and selling for what it will fetch. It is one of the greatest advantages of the bee industry that honey is not a perishable crop, but such bee-keepers as you mention would seem to act as if it was.

G. W. B. (Yeovil).—*Bottles as Rapid Feeders.*—1. Inverted bottles or jars can hardly be called rapid feeders in the full sense of the term, although a wide-mouthed glass jar holding half-a-dozen pounds or so, with its mouth covered by coarse net, or any very open material, will serve the purpose fairly well. On the other hand a properly constructed rapid feeder allows thousands of bees to be feeding at one time, consequently the syrup is carried down very fast. *Bees Building Across Frames.*—2. It is now too late to expect bees to build combs anew after the mischief of which you complain has arisen. Leave renewal of combs till spring.

F. V. H. (Buxted.)—*Naphthaline in Balls.*—We think the rapid evaporation is rather an advantage than otherwise, but we have not found it necessary to renew the supply more than twice in each year, viz., in September and April.

S. H. (Ivybridge.)—*Race of Bees.*—The bees sent are well marked Ligurians.

G. L. (Ardlamont).—*Heather Sections for Sale in Summer.*—If you can keep the honey in sections from granulating till next year they should, we think, be readily saleable.

JNO. BERRY (Llanrwst).—*Beeswax in Marketable Cakes for Retailing.*—The cakes of wax which took first prize in class referred to at "Royal" show in June last were circular in form, resembling in size and shape the cakes of "heel-ball" used by shoemakers for blackening boot-heels. Each cake would probably weigh 1 oz. The exhibit in question gained "points" for the admirable way in which the wax cakes were put up for the retailer's purpose. Packed away in ordinary cardboard section-cases glazed on one side; each box held about one and a half dozen of the cakes and kept them clean and ready for handing over the counter.

Editorial, Notices, &c.

THE DAIRY SHOW,

AND CONVERSAZIONE OF THE B.B.K.A.

The advertisement on our front page will serve to remind readers that the Dairy Show of 1899—which bids fair to be an exceptionally fine one—opens on Tuesday next, the 17th inst. We are also authorised to extend to all bee-keepers who purpose visiting the show a cordial invitation to attend the final Conversazione of the B.B.K.A. for the year at 105, Jermyn-street, St. James's, where the Board-room of the R.S.P.C.A. is placed at the disposal of the Council for the evening, the Conversazione beginning at five o'clock. Light refreshments will be provided for visitors, who can reach the place of meeting readily by 'bus from the Agricultural Hall to Piccadilly-circus in about half-an-hour.

The Council of the B.B.K.A. have changed their usual day of meeting to Thursday, that being the day when cheap excursions run to London. They therefore hope to see a good number present, and by those who take any interest in a pleasant social gathering where bees and bee-keeping form the subjects "talked" about, a couple of hours may be very agreeably spent.

THE "GROCERIES" EXHIBITION.

The Fourth International Exhibition and Market of the Grocery and its allied Trades was held in the Agricultural Hall, London, on September 30 to October 7, and was an all-round conspicuous success.

It is a difficult matter to compare the exhibitions of this and last year, seeing that the crowds of visitors we saw twelve months ago could hardly be exceeded in point of numbers. But it appears from the official returns that this year's show is a great advance on that of 1898 in every respect, the entries being much more numerous and the difficulty of providing space for stall-holders correspondingly increased. Anyway, it seemed that every available foot of room was fully occupied with finely-decorated and beautifully-arranged shops and stalls, all full of the various items dealt with in the "Grocery, Provision, Oil, and Italian Warehouse Trades," whose special show it was.

Although somewhat adverse weather should have told against the attendance, the hall was crowded all the week, especially in the evenings, and no doubt the turnstiles will show a considerable advance this year.

The honey section of the competitions was again limited to Master Grocers only, but we understand the entries in the classes for comb and extracted honey nearly doubled those of 1898. This is, no doubt, very encouraging, as was the improvement in staging the exhibits on stands similar to those used at all our important honey shows, instead of locking up the sections and jars in glazed counter-cases, as at the last show. The quality of the exhibits, too, as may be guessed, were an immense advance on those seen last year, the class for extracted honey not only being well filled, but included some beautiful samples, equal to any we have previously seen this season, which is as high praise as we can give, except to say that four *v.h.c.* awards beyond the prizes available prove how keen was the competition.

Sections, too, were very fine, and it was with keen regret that we saw several excellent dozens of sections disqualified through the carelessness of exhibitors' in ignoring the rule as to width of lace edging. It was a pity to see probable winning exhibits put out in this way, but no one is to blame save the exhibitors themselves.

In closing this brief notice we may congratulate the Directors of the Exhibition and ourselves on a distinct advance in the honey section. Mr. Herrod did his work well in displaying the exhibits to full advantage, and, being on the spot all the week to answer enquiries, filled a gap that was felt last year.

Mr. W. Broughton Carr and Mr. C. N. White officiated as judges, and made the following awards :—

Twelve 1-lb. Jars Extracted Honey.— 1st (and Bronze Medal, B.B.K.A.), T. Hinwood, Broughton ; 2nd (and certificate B.B.K.A.), E. J. Burgess, Compton; 3rd, C. K. Fry, Stockbridge; v.h.c., W. M. Linton, Biggar, N.B., F. Chapman, Wells, Somerset, D. Bunford, Newton, and R. Barber, Bournend, Thanet ; c., Rees Bros. & Co., Haverfordwest, T. W. Minno, Merton Colly.

Twelve 1-lb. Sections. — 1st (and Silver Medal B.B.K.A.).—E. J. Burgess ; 2nd, W. G. Walton, Windermere ; 3rd, Jas. W. Walker, Wallingford ; v.h.c., E. J. Millar, Eastbourne, H. Lane, Somersham, Hunts, Jno. Berry, Llanrwst, and R. Barber.

THE "BATH BEE CASE."

In addition to the several amounts already notified in our issues of September 7 and 21 (pp. 350 and 370), we have received the following sums :—

Already acknowledged ..	£3	16	0
F. H. Hoole.....	0	2	6
J. W. Spencer.....	0	2	6
W. McNally	0	1	6
G. Dow.....	0	1	6
John Walton	0	1	2
F. E. R.	0	1	0
A. H. Miller	0	1	0
Total.....	£4	7	2

The above amount has been forwarded to Mrs. Pavy.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

MY BEE DOINGS IN 1899.

[3782.] We have finished our season here, and I send you some notes on my stock and some neighbours' bees that I had the handling of. Bees showed out first on January 19; in February they flew freely, and turned out very strong. The weather was cold and wet, yet they worked hard, and on April 2 I noted that most of the bees were bringing in honey. This is the earliest I ever noted any perceptible honey flow. April 25 I made the first thorough examination of frames; all seemed most promising, except that there were odd cells here and there that answered to every description of foul brood. As this district is badly infected, I was not surprised, although naphthaline has never been omitted; but what does surprise me is, that since then I have been unable to find the least trace of the disease, and also that in a neighbour's hive, badly diseased in April, the traces disappeared later, the combs being filled with healthy brood, and the hive yielding the fine total of 128 lb. of section honey. I shall watch carefully this hive and my own next year, but my impression is that thorough cleanliness, renewal of brood-combs, and constant presence of naphthaline has practically cured foul brood in these cases. On April 25 I put on first rack of sections; on May 12 a second rack; on May 20 they cast out a queen grub. Bees were working very hard, though the day was so cold that many perished on the ground about the hive. (Honey flow from hawthorn and fruit trees.) On May 29 third rack of sections; on June 7 the hive was so crowded I took out five frames, and formed nucleus to be ready for a Tunisian queen which I had ordered. Even this seemed to make no impression on the great population of the parent hive, and I had to begin removing finished racks of sections and tiering up, till in July I had five racks (105 sections on). By middle of September all work was over, and the hive, with ample stores and some nice patches of brood, packed down for the winter, the total yield from this being 191 lb. of beautifully-finished section honey.

The nucleus formed in June had a chequered career: they all swarmed out with the queen on her mating-trip, and she was lost. I gave them two more frames of brood, and a ripe queen-cell from the parent hive, replacing the empty frames from the nucleus. Their second queen mated all right, and gave them some brood, but had disappeared by July 21, when the foreign queen ordered arrived, and the last of her produce were just hatching out. I entirely failed to account for her loss, as the hive was not manipulated in the interval.

The Tunisian queen was well received, and all has gone well with her since. I cannot distinguish her progeny from my original stock, which are about ⅞ Black-Ligurian, but they stopped working much sooner—so much so, that I examined the hive on September 8, fearing something wrong, and was agreeably surprised to find it very strong in bees, brood, and honey.

In spite of its misfortunes, this offshoot gave me 23 lb. in sections, so that I credit the parent hive with 214 lb. good section-honey for 1899. My neighbour's hive, mentioned before, produced 128 lb. This has been, I think, the best honey season I have known; yet some keepers of bees about here have had no surplus! and others have not yet taken off the racks of sections!

What I have learned from this season is, first, that foul brood, in its going and coming, is as unaccountable as anything else concerning bees and bee-keeping.

A neighbour of mine caught a stray swarm late in 1898. It swarmed six times this season: one swarm filled a big straw skep and eleven frames in a bar-frame hive, the others all succeeded in filling their skeps, and were very heavy when I saw them in September; they are quite the crossest bees I ever handled.—ALEX. H. DELAP, *Strabane, September* 29.

P.S.—I append a brief report of results from four colonies of bees at Kiltrevogue Rectory, co. Donegal:—

First Stock	119 lb. section honey.
Swarm	105 „ „ „
	224
Second Stock ...	90 lb. sections.
Third Stock	97 lb. sections.
	42 „ run honey.
	139
Fourth Stock ...	104 lb. sections.
First Swarm.....	105 „ „
Second Swarm ...	21 „ „
	230

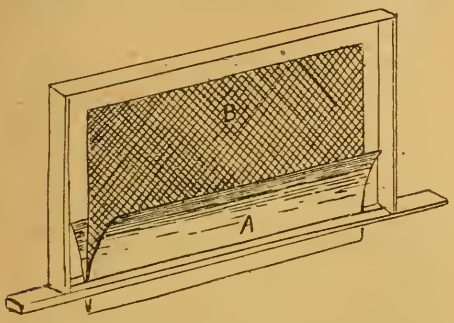
Average for four hives, 160½ lb. sections, exclusive of 42 lb. run honey.

FIXING COMB-FOUNDATION.

[3783.] If I am thrusting an old idea upon you, I apologise.

Some bee-keepers find a little difficulty in inserting a sheet of foundation into the slit top bar of a frame; and I think the simpl

idea in rough sketch here shown will help many of your readers to overcome the difficulty somewhat. A is a sheet of paper, folded and put through the slit of top bar—strong, smooth paper, similar to notepaper. Place sheet of foundation (B) between the folds tightly. Draw A through the slit, and when the foundation is pulled through a little way,



hold the foundation at B firmly and draw the sheet of paper through, and it leaves the foundation intact. Hoping this will be easily understood and prove of some use.—F. E. S., *Birmingham, September* 26.

MOTHS IN HIVES.

[3784.] Will any reader of the B.B.J. kindly give me some idea how to prevent moth entering hives? Last year I had one stock completely destroyed by these pests. This year I have four hives which are slightly infested. To keep them down I have to examine them every week. I have been told that camphor laid on the quilts is very good, and have used it. I also put weak carbolic round the entrances, but it is no use. I have been a bee-keeper several years, but have never seen anything like this before, as they cause great destruction if left alone.—S. Kerridge, *Bury St. Edmunds, October* 4.

[Before giving advice that will be of much service, readers should be informed whether or not the moth complained of is the real wax-moth (*Galleria cereana*).—Eds.]

[3785.] Of all the diseases, pests, and enemies which bees and bee-keepers have to contend against, I think there is nothing so prevalent and so troublesome as the wax-moth.

In this district, at any rate, foul brood is decidedly uncommon. I examine a large number of hives in the course of the season and in various parts of the county, but I rarely come across a case of disease; whereas, I never open a hive without seeing at least some evidence of the wax-moth.

In my own apiary this has been a record season for wax-moth, and I have devoted more time to combat it than I could reasonably spare in what has been to me a busy honey season. A strong stock of bees can generally take care of their own combs, but they will only take care of the combs they cover, and one superfluous comb will sometimes prove a veritable nursery for the pest, the warmth of the hive conducing largely to its development.

Unless a bee-keeper can preserve his empty combs from one season to another, bee-keeping will certainly never pay, and it is these empty combs which the wax-moth can most easily get at, because the ever-watchful bees are not there to protect them.

This season I placed a few combs in an empty hive, closed up the entrance, and made it, as I thought, impossible for the moth to enter. I was expecting some driven bees, and these combs were intended for them.

I opened the hive a short time after. The moth were there, and several combs were affected. I painted the hive inside with a solution of carbolic (1 in 3), and replaced the combs and made all tight again. I supposed this would destroy the grubs, but I was mistaken; and on opening the hive again a little time afterwards, I found the moth was carrying on its depredations more extensively than ever.

I then placed a shallow tin plate at the bottom of the hive, and, having filled the plate with pure carbolic acid, I replaced the combs, made all tight again, and awaited the result.

The weather was hot, and the fumes of the acid passing upwards and over the combs ought to have killed an elephant, but it did not kill the wax-moth; and the next time I opened the hive the combs smelt so strongly of carbolic I do not believe the bees would ever have taken to them again, but the moth still thrived and the web extended from comb to comb.

I was determined now to see how much they could stand. I threw away the useless carbolic, filled the plate with chloride of lime, damped it, and made all secure as before. The next time I opened the hive I found that the ants and other tiny insects which had found their way in had dropped dead on the floor, but the wax-moth lived and thrived. I fancied the grubs looked rather sickly, but they were alive and doing wholesale damage.

I now examined about 200 frames which I had packed away in paper with plenty of camphor to keep away moth. I found nine were useless and thirty were affected. I pay some little attention to my combs, and by always using full sheets of foundation, carefully wiring each frame and rejecting every misshaped comb, I have obtained a presentable collection of them. After such a loss as this I grew desperate, and sat down to reckon up the cost of honey production, &c. It then occurred to me that although nature had provided these creatures with the most marvellous powers of endurance, she had not provided them with gills, and they could not therefore exist under water any more than we could.

A large tub was standing by, and in this I packed as many of the combs as it would hold; two queen excluders were placed on the pile, and two very heavy flat stones on the top, and the hose-pipe soon filled the cask with water. After twenty-four hours of submersion, the combs were taken out, placed in the extractor, and the easiest bit of extracting I have ever done was throwing water out of these combs. The grubs were dead and hanging out of the cells. The combs very quickly dried in a warm room—it is very necessary they should, or they would become mouldy.

The frames, sprinkled with camphor, are again packed away in newspapers, and as the winter approaches they will be less liable to the moth, but should they again be attacked, I shall confer upon them the "order of the bath." I venture to suggest that if some of your readers will give us their experiences with this pest, we shall arrive at a method as effectual as the above and perhaps with less trouble.—L. GLASSPOLE, Hon. Sec. B. and D. B.K.A.

WIRING FRAMES.

[3786.] The following is how I wire frames with the saw-cut through the top bar, which may be useful to your correspondent "Tom Nicholls" (2279, p. 385). First I drive three fine wire nails, about an inch long, through the side of top bar, not driving the two outer ones quite home. I then take a fine pricker and bore four holes through the bottom bar; having cut off a length of wire, I commence by giving it two or three turns round the head of side nail at right hand, which projects just sufficient to hold the wire, then pass the wire half way over the top bar, down through the saw-cut, and thread through the first hole in bottom bar, back up through the next, and carry upward to the top, drawing it through the saw-cut and over the centre nail which passes through the middle of top bar and back again at the other side of the nail, thread through the bottom rail and back again up to third nail, letting the wire go through the saw-cut, and then fasten by two or three twists round the head of nail on left hand. The wire, when finished, is in form something like the letter W. It is simple and expeditious, and answers splendidly.—W. M. WOLFENDEN, *Kirkby Lonsdale.*

A BEGINNER'S IDEAS.

THE SALIENT POINTS OF BEE-KEEPING.

[3787.] As one studies the subject of practical bee-keeping, two things that conduce to successful apiculture are brought clearly before us, viz., the value of young queens, and feeding at the correct time.

With regard to the former, great diversity of opinion exists as to the best breed for our climate. Working for extracted honey, the best, in my opinion, are Cyprians, while for comb-honey perhaps a cross between the ordinary black bee and Carniolans cannot be excelled.

This is my experience with an apiary of forty hives. Too little attention is paid generally to the introduction of fresh blood. With other forms of stock-raising great attention is given to the importance of mating the choicest and most prolific mothers to the best sires, with a view of raising the standard of the offspring.

Then why not in bee-keeping? Again, too, that bugbear of the apiary—the swarming fever—can be reduced to a minimum if care is taken for a few seasons to breed from queens that have not swarmed, and when increase is wanted, to divide our stocks and head them with these young queens, and so, in a short time an ideal strain of bees—grand workers and practically non-swarmers—would be established.

I think the greatest apicide of all is starvation, and many more stocks are lost this way, than by the dreaded *Bacillus alvei.* The last winter and spring were such as to prove the value of good autumn feeding, the stocks receiving plenty of stores, coming out well, with plenty of young bees, and upon these early-hatched bees depend, in a great measure, the amount of surplus honey we shall get. It is far better for the bees to have an *embarras de richesse* than an insufficiency. A good stock crammed on to eight frames with six frames of stores, and well protected with cork-dust tray above, will go through the most severe winter, and in the spring there will be very little, if any, dwindling.—T. HERBERT POWELL, *Norfolk, September* 26.

AN EFFECTIVE OUTSIDE-FEEDER.

[3788.] Not being able last season to "see to" the feeding of my driven bees, except very early in morning or late in evening, I arranged the following apparatus, which answered splendidly, as it has again recently. The materials required are a tin can, with lid, holding a gallon (more or less); a small tap, known as a flexible tube cock (cost 6d.); about a yard of ¼ in. rubber or tin tubing, and an old tin lid. To make same, I bought a can sold at oil-shops to hold paraffin, with screw top (cost 7d.), then made a ¼ in. hole through same close to bottom, and soldered the tube-cock or tap to this. I then punched a large number of small holes in the tin lid (which latter was about 4 in across and ¼ in. deep), and one larger hole in the side. To this hole I soldered a 6-in. length of tin tubing. The apparatus was then ready to set up. In my case, the hive being near a wood fence, a rough bracket was nailed on to said fence level with top of frames in brood "nest." If no convenience such as this is at hand a rough stand must be made to the specified height. On this stand or bracket put the bottle or tin.

Now bore a hole through side of hive level with top of frames ; lay tin lid on frames, and pass the tin tube through side of hive, covering the whole with the quilts. Fill bottle with syrup, and connect tap with the length of pipe protruding from side of hive. This supply may now be regulated by the tap, as rapid as desired or as slow, without exposing the bees in any manner, and if the bottle is refilled within doors, without the slightest possibility of stray bees getting a share of the sweets. To ensure regularity, a *very small* hole must be punched in top of bottle above the syrup line.—WILL HAMPTON, *Richmond.*

THE LATE-FLOWERING LIME.
(*Tilia petiolaris.*)

THE LATE-FLOWERING LIME.

TILIA PETIOLARIS.

[3789.] I have been interested in the correspondence in your columns on the late-flowering lime. Without knowing whether I can throw any light on the subject or not, I may be allowed to say there is a lime tree growing here which is probably the one meant. I planted it here myself in the park, but cannot remember where it came from. We have a collection of some twelve sorts of lime, all named, but I don't think it came with them, or else I should have known its name. I know it blooms later than the ordinary lime, but cannot quite say how long afterwards. It is a grafted tree, and of a very pendulous habit, with silvery backs to its leaves, so that the syn. *pendula* or *argenta* would be equally applicable. It seeds very freely, though I have never yet seen a seed germinate. I know of two other small young trees in this neighbourhood, besides our own, and they, too are grafted, so that I do not suppose it would come true from seed. I am sending you a photo. of a branch of the tree, taken from the underside (and also of a small twig), which gives a good idea of the appearance of the leaves and seed-pods, as seen when standing underneath and looking up at its branches from below, and also the peculiarity of its seeding. It is a fairly rapid growing tree ; the one here having been planted about twenty years. It is now about 30 ft. high and the head 25 ft. in diameter. But any one planting a dozen small trees, or even several dozen of them, would, I am afraid, hardly live to reap much benefit to their bees from them, unless the planter was very young. I should think it is the true variety Messrs. Dicksons are offering your correspondent, and that they are worked trees, as they are described as "*on* good straight stems." The tree in our park here retains its leaves very late indeed (as the photo just taken shows), at present it looks as fresh and bright as it did in July.

Trusting these notes or the photos may be of some use to you.—G. C. LYON, *Alexandra Park, Hastings, October* 2.

[We have omitted our usual "Homes of the Honey Bee" picture this week in order to present a reproduction of Mr. Lyon's admirable photo as above.—EDS.]

[3790.] With reference to the late-flowering lime tree mentioned in B.B.J. of September 28 (page 382), I have enclosed a few small branches, with and without seed-pods, of a very late-flowering lime growing here. It flowers when the bloom of the ordinary or common lime (*Tilia vulgaris*) is over, but whether it is *T. petiolaris* or not I cannot say,

but perhaps you may be able to say in next issue of B.B.J.—T. GILES, *Cowesfield Nurseries, Salisbury, October* 3.

[We forwarded a small twig of the branch sent to our correspondent Mr. Reid, whose letter in reply we append below.—EDS.]

The twig of a lime-tree from Salisbury, which you sent me, appears to be identical with the late-flowering variety, to which I called attention recently; but whether the botanical name be *Tilia petiolaris* or *Tilia alba pendula* I leave to botanists to decide. At the present time it may be distinguished from the common lime by the following characteristics: the leaves are rather larger and slightly darker on the upper side than the common lime; the veins or ribs underneath are more prominent and the colour of the lower side of the leaf is a silvery grey. The seed-stalk is stronger; but the chief difference at this time of year lies in the seed-pods, which, instead of being round or globular, have five distinct lobes.

The tree is, no doubt, well known to botanists; but bee-keepers do not appear to have paid much attention to it hitherto. Now that your readers are taking an interest in the matter it is to be hoped that sources of supply may be found, so that the trees can be planted throughout the country.—WALTER J. REID, *Addlestone, Surrey, October* 6.

[3791.] As is so often the case with natural sciences, much uncertainty prevails in the minds of many as to names, and this is so with *Tilia petiolaris*, as the dispute in your columns show. And with regard to botanical specimens, unless each individual name is accompanied by that of the author, it is most difficult to say which varieties are synonymous; so that, unless the authors' names are considered, we can never come to a right conclusion. This applies to zoology and entomology as well as to botany.

There are two varieties of the late flowering silver lime, but are they quite distinct species? One is known as the American, and is scientifically called *Tilia alba* (*Aiton*), which is synonymous with *Tilia Americana* (*Luiné*), *T. Americana* (*Watson and Du Roi*), and *T. petiolaris hortorum* (*D.C.*). *T. alba* is a native of North America, and flowers from middle of July to end of August.

The other variety is the Hungarian silver lime, and is called *Tilia tomentosa* (*Mönch*, 1785). It is synonymous with *T. alba* (*Waldstein and Kitaibel*, 1802). *T. petiolaris* (*De Cantolla*, 1824). A further variety of *tomentosa* (*M.*) is *T. tomentosa pendula hortorum*, which is synonymous with *T. alba pendula hortorum*. A sub-variety of the same exists, called *T. pendula hortorum foliis variegatis hortorum*.

These forms are natives of Hungary, and extend to South Russia (including the Crimea), Turkey, and Asia Minor, flowering from the middle of July to the beginning of August.

Your correspondent, Mr. Till, may be interested to know that there are at least eighteen varieties of lime and eight hybrids, in addition to forty-four sub-varieties, which are at the present time being cultivated in Europe.

If those who are in doubt will look the matter up, they will find the above to be absolutely correct.—R. HAMLYN-HARRIS, F.Z.S., F.E.S., *October* 6, 1899.

A PAYING SWARM.

[3792.] Your correspondent, "D. M. M.," is to be heartily congratulated on his record, as stated on page 395. It would, however, be of interest to know the method by which it was secured. Will "D. M. M." oblige by telling us? There was, I take it, a large population of young bees in the hive when the clover came into bloom, and there was probably an increase of population right up to the end of August. I assume this to be the case from the fact that the swarm had been brought up sufficiently strong to occupy twelve frames. "D. D. M.'s" success is due in part to his unorthodoxy. Had he managed his swarm as most of us would have done, he would have confined his 4 lb. of bees to some six or seven frames, and then in a week or two put on his super. And this method, with the honey flow imminent and of short duration, would have been the correct one. With a honey flow not due for seven or eight weeks, and lasting for probably two months, the plan evidently adopted by "D. M. M." is much the wiser. We who are confined to a short clover harvest cannot hope to attain the results achieved by those situated so fortunately as are "D. M. M." and Mr. Lancelot Quayle.—J. M., *Pontypridd, October* 9.

NOTES FROM WYCHWOOD FOREST.

A NOVEL METHOD OF BEE-DRIVING.

[3793.] The season now closing has left behind it a record of results in the "notes," mental and otherwise, of bee-men in this district of a very variable character. Those whose stocks were ready when the inflow of nectar came with a rush, had full supers of splendid honey, while such of us as were not quite toeing the line did not fare so well, consequently we must put a red mark under the words, "Be in time," in our note-book, and another year be ready for anything. The quality, however, of the honey here is A 1. My bees, like good workers, have "gone" for the best quality obtainable, and have got it too. And as the proceeds are got from an outside source, they can be spent for the good of "the firm."

I heard of one working-man bee-keeper who went to a certain city noted for its colleges, and having sold his honey, &c., entered

a boot-shop, and after examining some of the stock-in-trade, was asked by the shopman what sized boots he wanted to buy to take home for the young folks. "Why, you can't give me the wrong size," said he, "for if they won't fit Tom they'll do for Dick. We have 'em of all sizes."

Swarms have been scarce hereabouts, but since September came in I had a lively time with either a swarm or a starved-out lot of bees (not certain which), which, not finding a bee-man with frames of honey or good syrup nearer at hand, came to see if I could "put them up," which I did without any bargaining about as to terms.

Leaky hive-roofs must now be seen to, for these copious rains will betray the faulty ones. A good plan of making hive-roofs watertight, I find, is to let the roof-boards run from top to bottom of slope of roof, for if the boards are square-edged and laid close edge to edge, little, if any, wet will get in, even if not covered with zinc. But if rain does get in, and a temporary makeshift is needed to keep out the wet, lift roof off and cover the hive or the outer case, if there is one, with a sound piece of brown paper about two inches larger than the hive. Then put roof over all, and if the rain or snow percolates through a crevice in roof the bees will be comfortable and dry, the paper holding water till poured off.

I have not been able to do much driving this season owing to want of time, but a relative who caught the bee-fever from myself tells me he has driven twenty lots. One old lady who keeps bees in skeps says he shall have the bees each year, as she will burn or suffocate no more bees. At first she objected to have the bees driven, and well she might, for some one had driven several skeps for her by removing the plug from the hole in top of skep and then starting to nearly suffocate the bees by puffing smoke in at the entrance till he drove the bees upwards and driving all the bees out of the skep by the feed-hole until the air was full of the escaping bees; the old lady herself getting badly stung during the operation. The bee-driver (?) then carried off the driven skep and placed an empty one in its place on the old stand. The old dame then made up her mind not to have bees driven in that fashion again.—JOHN KIBBLE, *Charlbury, October* 5.

BEE PARASITES.

[3794.] Mr. J. W. Spencer's remarks in BEE JOURNAL for October 5 (page 396) are very interesting, but are they not merely a matter of speculation? For it is almost impossible to decide with any certainty as to any one particular *species* from mere description.

To the best of my knowledge, the "harvest bug" has *not*, up to the present, been regarded as a *bee* parasite. It would, therefore, be a matter of real interest and value if those who "suffer from the same annoyance" would send a few of the bees infected to some one who can give the question careful and proper attention. I, for one, would be pleased to do so, though the probability of *bees* being subject to such an enemy strikes me as very unlikely. We are, however, always open to correction.—R. HAMLYN-HARRIS, F.Z.S., F.E.S., *Zoological Institute, Tübingen University, Germany, October* 6, 1899.

METEOROLOGICAL

OBSERVATIONS TAKEN AT KETTON, STAMFORD, RUTLAND, FOR THE WEEK ENDING OCTOBER 7, 1899.

1899.	Bar. in.	Tem. 9am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.	Wind.
Oct. 1..	29·37	43·5	56	35	21	45·2	·73	NE
,, 2..	29·25	51·1	52	43	9	47·4	01	W
,, 3..	29·85	52·2	58	42	16	49·8	·10	SW
,, 4..	29 72	50·0	52	48	4	49·9	·15	S
,, 5..	30·12	47·0	57	45	12	50·8	—	N
,, 6..	30·14	43·5	58	30	28	43·6	—	N
,, 7..	30·10	38·5	54	31	23	42·1	—	S
Means ..	29·79	46 7	54·3	39·1	16 1	47·0	·99*	—

* Total, ·99 in.

Mean vapour tension, 0·272 in.; mean relative humidity, 85 per cent.; mean temp. of the dew point, 42°·2. The rainfall, viz., ·99 in., = 22,396·77 gallons, or 99 99 tons to the acre, or 4 95 lb. to the square foot. Distant thunder, lightning, and torrential rain at 4.5 p.m., also distant thunder and lightning at 4.40 p.m. on the 1st. For the week ending September 30, the mean temp., viz., 49°·7, was − 3°·9, and the rainfall, viz, 1·24 in., was + ·53 in. The mean temp., September 17 to September 30, viz., 51°·8, is − 2°·8, and the rainfall, viz., 1·82 in., is + ·43 in.

FRED. COVENTRY.

The Vale, Ketton, Stamford.

CROOKED SECTION - COMBS—DIFFERENCE IN COLONIES.

Question.—I am trying to produce section honey without using separators, and have some bulged or crooked combs. Some time ago I read the following in a paper:—"In the fall, after extracting the honey from the partly-filled sections, and recasing the sections of empty comb, no separators being used, the combs are not always perfect in the sections. When we find one side a little fuller than the other, we put the two full sides together, and the hollowing sides together. No matter if the full sides of the combs should touch each other, when the bees begin operations the following season they will cut right through, building out the other sides equally, and the occasional crooked ones are thus made straight." Is this right? I have it copied into my diary.

Answer.—The very admission of both yourself and the writer quoted should convince you that the only way to produce section honey, in the most marketable shape, is to *use separators*. When a person admits that

occasionally he has crooked combs by the non-use of separators, I always read between the lines that those occasional crooked combs can be multiplied by ten and not be far out of the way. And then those occasional crooked combs condemn the use of any system which gives an occasional faulty thing, when there is a system, equally good in every way, that does not give a single faulty section along the line of crooked combs. But, to the question :

I wonder if the writer had ever practised the plan given, and, if so, how it could be that his experience was so much different than mine had been when trying the same plan. In every case where I ever put two combs in sections, or brood-combs even, so that they touched each other, I have found that the bees always left little bridges of combs from one comb to another, so that, when the combs were pulled apart, the cappings of one or both combs were broken, thus setting the honey to running and making the sections in anything but the *best* marketable shape, unless put back on the hives for the bees to recap the cells. And this is not satisfactory, for in so doing the bees nearly always remove the honey out of these damaged cells, so that the whole process requires nearly half as long as it does to fill a section from the start. This causes a great waste of time to the colony, for they are thus kept fussing over a bad job instead of doing new work.

My plan has been to place any crooked combs I may chance to have—brood-combs or otherwise—at the top of a warm room, on a piece of canvas, until thoroughly warmed through, when the combs can be bent and straightened to the perfect satisfaction of the operator. In this way I have a perfect thing of it; and, as the work is performed in the winter, it is much more cheaply done than in having the bees make a "botch job" of it in the summer.

DIFFERENCE IN COLONIES AS TO SURPLUS.

Question.—I have noticed for some years back, that, of many colonies in the spring, which were exactly alike as nearly as I could discover, some colonies would give an excellent surplus, while others would give very little or none at all. Why is this? Can you tell us in the *American Bee Journal?*

Answer.—Here is a question that used to bother me greatly, for I was formerly troubled in the same way; but of late years I have succeeded in making the most of my colonies, which were worked for honey, produce nearly like results; that is, if one colony contains 40,000 bees and produces 100 lb. of honey, I obtain about that amount from every colony containing a like number of bees; while one having 20,000 bees gives a yield of about 45 lb., for a small colony will not give quite as large a yield in proportion to its numbers as a large one. After carefully studying on the matter I found that colonies I pronounced "exactly alike" on May 15 would not be so at the time the honey harvest was at its best. The trouble was I did not have a thorough knowledge regarding the working force of my bees at all times, nor of the interior of the hive.

For instance, the colony which I called the best on May 15 might become the poorest by July 10, at which time the honey harvest arrived. This might be owing to two causes, one of which would be the failing of their queen, and the other that the colony would reach its maximum of strength some time previous to the harvest—either of which is sure to lessen the yield.

I have often noticed that a colony which winters extremely well, and goes to breeding rapidly in early spring, is generally sure to produce less honey than the colony that begins to breed rapidly from forty to fifty days previous to the honey harvest. The reason seems to be that the queen in such a colony breeds rapidly very early, ceases her prolificness to a very great extent by June 5 to 10, this allowing the bees to put the first honey coming in into the brood-combs, rather than forcing it into the sections, as does the queen which arrives at her maximum egg-laying at this time. If this is not the case, the colony becomes demoralised by becoming too strong at this time, and so goes to loafing around, or, what is worse still, contracts the swarming mania—either of which is against a large yield of section honey. If the bees become over-anxious to swarm, or the queen ceases to be prolific, so that the bees get the start of her and store honey to any great extent in the brood-chamber during the first of the honey harvest, that colony will not do nearly as well as will one which does nothing of the kind.

The remedy is to keep the queen on only a few combs early in the season, or take away a part of her brood to strengthen weaker colonies till the right time has come, when her extra powers will rear bees that will come at just the right time; then coax her to do her level best, and you will succeed. At this time give all the combs the hive will contain, and let her spread herself to her greatest capacity, then the colony will reach its strongest point just when the harvest is on, and thus bend every energy at storing in the sections rather than crowding the queen or loafing around.—G. M. DOOLITTLE in *American Bee Journal.*

Queries and Replies.

[2288.] *Heather Honey-yield in* 1899.—Being a constant reader of B.B. JOURNAL and interested in bee-keeping, I beg to forward two samples of honey for your inspection and report in next issue as to its quality, &c.—good or otherwise—and also from what flowers or plants it has been gathered. No. 1 is the early, and No. 2 the late crop. Regarding the

latter, I cannot imagine what the bees have collected it from, as I have not had any honey like it in the whole ten years during which I have kept bees.—DAVID DAVIES, *Tolgarth, October* 2.

REPLY.—No. 1 is a good honey from mixed sources, mainly from clover, we think; it is, however, rapidly granulating. No. 2 is similar to No. 1, but has, we should say, an admixture of more than 50 per cent. of heather honey in it. We regard No. 2 as of first-rate quality. The novel experience of bees gathering heather honey this year in districts where it has never previously been known to be obtainable—in sufficient quantity to give it the well-known and characteristic aroma and flavour of the heather—is quite remarkable, as shown by the many similar reports we have received.

[2289.] *Rapid Feeders and Autumn Feeding.*—In "Useful Hints" of September 28, you allude to a "rapid feeder" that will hold the full supply needed to feed up a stock in one evening! Would you kindly say where such feeders can be purchased? I have used the bottle-and-block feeders this season, and they are so small as to need filling every evening, which entails a good deal of labour and time. All my hives this year after taking off supers were practically foodless; just a little honey at the top of the frames. The bees have, however, done exceedingly well in supers, which accounts for the scarcity in brood-chamber. My colonies are all strong and full of bees, only two hives having swarmed; consequently they have needed fully 20 lb. and 25 lb. of syrup for each stock. 2. Is there such a feeder as would take that amount at once? and would you kindly give me a hint as to how to "properly arrange" the feeder to ensure the bees taking the whole supply at one operation?—W. P. S., *Salhurst Park, near Chichester, October* 5.

REPLY.—1. We have no doubt that any of our leading advertisers who deal in bee-appliances will supply a rapid-feeder, holding from 10 lb. to 20 lb. of syrup food. 2. The words "properly arranged," used in reference to bee feeding, mean so fixing above the frames of hive as to allow of no avoidable escape of warmth from the hive. In other words, to make the bees as snug and warm as possible while feeding. If the food chamber is full of warm syrup (and well wrapped with woollen coverings to conserve the heat), it will be readily filled with bees, while the standing-room in a feeder fitted with partitions of thin wood will allow many hundreds of bees to feed at one time; and in consequence the syrup disappears very fast. On the contrary, a badly arranged feeder, laid on top of frames, ill-fitting, may be, and no trouble taken to prevent escape of warmth from brood-chamber, will often be entirely neglected till the syrup has become cold, making the feeder like an ice chamber, into which the bees will not enter.

[2290.] *Dealing with Foul Brood.*—I forward you three samples of comb from one of my hives suspected of foul brood. The bees in this hive were driven from a skep on August 4, and given five frames of comb, two of which were fully drawn out combs, two with half-built combs, and one with honey from another hive. I ought to say that the queen of the driven lot of bees was a young one raised in the skep after removal of the old queen. The bees covered all the five combs given them, and the queen commenced to lay at once, and the stock appeared to go on so well that another frame of foundation was added later on. And the hive, after having been given about one pint and a half of diluted honey, was left to itself till September 22, when I examined and found it very weak in bees and the combs containing brood looking unhealthy. I then put on a bottle of syrup, but it was scarcely touched, so I examined the hive very carefully on September 29, and found that the bees had dwindled so much that they were scarcely able to cover three frames, and that there was no honey at all in three of the combs, and only a small quantity at the top of the others, which the bees appear to have been consuming. There was a nasty smell from the brood-combs. Now, the old comb which was given from another hive cannot possibly have contained foul brood, as other driven bees got frames from the same hive and are all doing well. The comb in the skep from which the bees were driven appeared perfectly healthy when cut out of the skep. 1. Are the combs sent affected with foul brood? Or is it only chilled brood, caused by an insufficient number of bees to keep warm the brood nest? 2. If foul brood, how can it be accounted for? 3. Can you account for the loss of bees?—R. N. B., *co. Kilkenny, September* 30.

REPLY.—1. Three quite unnecessarily large pieces of comb sent were so absolutely rotten with foul brood, in nearly every cell, as to make us heartily wish that all but a square inch of it had been left in co. Kilkenny. Indeed, we feel sure our rev. correspondent cannot have read our repeated request not to be burdened with more than a small piece of such comb—and the reasons for such request. As a matter of fact, a business building in London is about the worst place in the whole world for getting rid of such stuff, and we hope all readers will kindly have sufficient consideration to remember this. 2. The colony may have contracted the disease in so many ways as to make it too risky to hazard a guess, when our correspondent is so inexperienced in the nature of foul brood as not to see at a glance how virulent a form of the disease he was dealing with. But, apart from the chance of the bees having been robbing a diseased stock directly after being hived, and feeding all the subsequent brood on such honey, we suspect the "pint and a half of diluted honey" given as the source of con-

tagion. 3. The loss of bees no doubt arose from the fact of no brood reaching maturity to replace the natural and normal mortality which occurs in all hives.

Bee Shows to Come.

September 25 to October 21, at St. James' Hall, Manchester. Show of British honey, honey-vinegar, and mead, under the auspices of the Lancashire Bee-keepers' Association, at the third British and Colonial Industrial Exhibition.

October 17 to 20 at the Agricultural Hall, London.—Show of Honey and Bee-produce in connection with the British Dairy Farmers' Association Numerous and liberal prizes for honey, &c.

November 16. At the Town Hall, Ludlow. Honey Show in connection with the Chrysanthemum and Fruit Society's Exhibition. Two open classes for honey (Sixes). Schedules, &c., from John Palmer, 17, Brand-lane, Ludlow. **Entries close November 7.**

Notices to Correspondents & Inquirers.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

G. Dell (Herts).—*Experts' Certificates.*—1. To gain a third-class expert's certificate it is first necessary to possess a fairly good knowledge of the theory and practice of bee-keeping in its various branches. In other words, the candidate must be a skilled bee-keeper, otherwise, to call him an "expert" would be a misnomer. 2. In queen-raising it is, of course, easier for a beginner to raise a small than a large batch of queens at one time. 3. There is no Herts B.K.A., but you could become a member of the nearest county association.

H. March (Horsford).—*Wide* v. *Narrow Shallow-frames in Surplus-chambers.*—1. It is merely a matter of opinion which of these is best, some preferring the wide frame and others keeping to the ordinary distance from centre to centre. 2. The cutting sent merely describes, in more or less imaginative terms, a mishap which probably caused a little discomfort, but nothing beyond, and it can do no good to give it more publicity than it has already attained.

E. Glossop (Derby).—*Bees Damaged in Transit.*—The question of responsibility for damage will no doubt be settled by the written terms in which the purchase was made. If the words of your order imply guaranteed safe delivery into your hands, the seller will, of course, be bound by those words, and he would, we think, have to claim from railway company. On the other hand, if proceedings are taken for recovery of purchase money the County Court Judge will decide on the merits of the case after hearing both sides. Our advice is, do not go to law about so trifling a matter.

A. Wilkes (Pelsall).—*Honey Samples.* No. 1 is a good honey from mixed sources, but is rapidly granulating. No. 2 is a mild-flavoured heather honey of very good quality.

F. S. (Devon).—*Lectures on Bee-Keeping.*—We are not aware of any published "book of lectures" on the above subject.

Rev. F. W. (Lancashire).—*Suspected Foul Brood.*—There is no foul brood in comb sent. The sealed brood in cells all seems to be in normal condition, most of the larvæ being almost fully developed.

Tom Nicholls (Llansamlet).—No disease in comb. Only chilled brood.

H. D. (Cornwall).—Comb is affected with foul brood.

W. C. (Pewsey).—*Home-made Comb Foundation.*—1. A few well-known bee-keepers use home-made foundation, but the great majority prefer to buy the machine-made article. 2. The only dealer we know of who stocks the "Reitsche Hand-press" is Chas. Redshaw, South Wigston, near Leicester. 3. Without having had any personal experience we should judge that 8 lb. of honey would equal 10 lb. of sugar in wine making.

G. K. (Tring).—*Hive Robbed Out.*—1. It is more than probable that the hive was queenless, and, after being robbed by the other stock, the bees have joined forces with the robbers. 2. The comb sent contains nothing worse than pollen. No sign of brood in any of the cells.

J. S. (Downham).—*Honey Samples.*—1. Honey is of fairly good flavour and, being fully ripe, will keep well as a granulated honey. 2. It has been gathered from mixed flowers. 3. The white "sugary substance" at top is simply the air-bubbles which had gathered on top of honey when in liquid condition. 4. The price (6s. per dozen) is a very moderate one for tie-over 1 lb. jars of honey like sample.

Hornets.—A correspondent writes:—"I shall be much obliged if you will please ask any of your readers who are able, to assist me in getting about fifty hornets, alive or newly killed; and for which I am willing to pay a fair price." Replies may be addressed "T. B. C.," B.B.J. Office.

Editorial, Notices, &c.

ROXBURGHSHIRE B.K.A.

ANNUAL SHOW.

The annual exhibition of honey, hives, and fruit, held in the Church Hall, Queen-street, Jedburgh, on October 7, was accounted the largest and best that has ever been held in the experience of the Roxburghshire Bee-keepers' Association. Indeed, some who are well informed in regard to the shows of bee-keepers were prepared to say that its equal has not been seen in Scotland. The chief feature was the splendid display of excellent heather honey. It was shown in great abundance both in supers and sections, and the quality was very high. Clover honey was also shown in considerable quantity, though its production this season has not been anything like so great as that of the heather variety.

The judges, Mr. Richard Cairns, Balruddery, Dundee; and Mr. George Wilson, Kelso, made the following awards :—

Collection of Honey not below 60 *lb. and not exceeding* 100 *lb.* — George Ormiston, Knowesouth.

Collection of Honey not exceeding 50 *lb.*—Jas. Whillans, Camptown.

Observatory Hive Stocked with Bees.—1st, Adam Oliver, Queen-street; 2nd, Wm. Sinton, Queen-street.

Twelve 1-*lb. Sections of Clover Honey.*—Harry Wood, Lichfield; 2nd, R. M'Andie, Edgerston; 3rd, Alexander Smith, Belses Station.

Twelve 1-*lb. Sections of Heather Honey.*—1st, Gideon Yellowlees, Castlegate; 2nd, James Whillans; 3rd, Arthur Hume, Hunthill.

Hive, Cost not above 20*s.*—1st, Wm. Swanston, Castlegate; 2nd, John Cranston, Boundaries.

Six 1-*lb. Jars Granulated Honey.*—1st, George Ormiston; 2nd, A. Gray, Kirkstile.

Six 1-*lb. Clover Sections.*—1st, Robert Sinton, jun., Bonjedward; 2nd, Henry Marrs, Newtonairds; 3rd, Robert Cossar, Monteviot.

Six 1-*lb. Heather Sections.*—1st, Wm. Swanston; 2nd, James Whillans; 3rd, Wm. Oliver, jun.

Five 1-*lb. Sections.*—1st, James Whillans; 2nd, Gideon Yellowlees; 3rd, Alexander Brownlee, Pleasance.

1-*lb. Section of Clover Honey.*—1st, David Welsh, Cessford; 2nd, James Whillans.

Two 1-*lb. Sections of Honey.*—1st, James Whillans; 2nd and 3rd, George Ormiston.

Super of Clover Honey.—1st, George Ormiston; 2nd, Gideon Yellowlees; 3rd, Wm. Mabon, Bongate Villa.

Super of Honey.—1st, Wm. Lunan, Hownam; 2nd, Gideon Yellowlees.

Super of Heather Honey (any weight).—1st, Henry Marrs; 2nd, George Ormiston; 3rd, Adam Telfer, Castlegate.

Super of Heather Honey.—1st, Wm. Lunan; 2nd, Thomas Mabon; 3rd, Wm. Swanston.

Super of Honey (not under 10 lb.).—1st, Wm. Lunan; 2nd, Wm. Swanston; 3rd, James Whillans.

Glass Globe of Honey.—Walter Oliver, New Bongate.

Super, Glass Top and Sides.—1st, Walter Oliver; 2nd, Arthur Bell, Lanton Hill.

Six 1-*lb. Jars Clover Honey.*—1st, George Ormiston; 2nd and 3rd, Harry Wood.

Six 1-*lb. Jars Heather Honey.*—1st, Adam Oliver; 2nd, R. M'Andie; 3rd, George Ormiston.

6 *lbs. Extracted Honey.*—1st, Thomas Dodds, Hardenpeel; 2nd, Adam Oliver.

1-*lb. Jar Extracted Honey.*—1st. J. R. Brindle, Newtonairds; 2nd Geo. Ormiston.

Beeswax.—1st, Geo. Ormiston; 2nd, William Swanston.

Exhibit, Invention, or improvement in Appliances in Bee-keeping thought worthy by the Judges.—J. N. Kidd, Gateshead.—(*Communicated*)

NORTHUMBERLAND AND DURHAM B.K.A.

ANNUAL SHOW.

After the exceptionally favourable season for bee-keepers, which has just come to a close, it was not surprising to find that the exhibition of honey, held at Lockhart's Café, Nicolas-square, Newcastle, on October 7, in connection with the Northumberland and Durham Bee-keepers' Association, should have brought together a collection of both clover and heather honey, excellent in quality and respectable in quantity, having regard to the initial character of the show. The competition was confined to members of the Association, and the prizes in the five classes were awarded by Mr. George Gibson, of Whickham, who acted as judge, as follows :—

Six 1-*lb. Sections of Clover Honey.*—J. Waddell, Wooler.

Six 1-*lb. Bottles Clover Honey.*—J. Cuthbertson, Bedlington.

Six 1-*lb. Sections Heather Honey.*—1st, R. Huggup, Glanton; 2nd, W. Tweddell, Riding Mill; 3rd, S. Dunn, Riding Mill; 4th, Messrs. Robinson & Scougall, Bedlington; 5th, J. Cuthbertson.

Best 1-*lb. Section Heather Honey.*—1st, J. Waddell; 2nd, Messrs. Robinson & Scougall; 3rd, S. Dunn.

Super of Heather Honey.—J. L. Dent, Burnhill.

Conspicuous amongst the exhibits was a new heather honey super weighing 1½ lb, consisting of three small combs in an ordinary 2-lb. section, which, when being filled, is laid flat on top of hive. These boxes can be attractively packed, much in the same way as chocolate and sweetmeats, the importance of artistic finish for the market being fully recognised.

A well-attended and representative meeting of the members of the Association, presided over by Mr. Wilson Ritson, Washington, was held in the evening.

The chairman welcomed the members to the first exhibition held under the auspices of their Association, and also congratulated the exhibitors, and especially Mr. Kidd, the hon. sec., who was the right man in the right place, and without whose services the Association could hardly have existed. An interesting discussion followed on the current prices of honey in the district.—(*Communicated.*)

CONGRESS OF BEE-KEEPERS AT COLOGNE.

No exhibition of any kind connected with bees and apicultural products has ever presented to my eye a more pleasing sight than that held in connection with the Congress of German, Austrian, and Hungarian Bee-keepers, which took place in the city of Cologne, with its 360,000 inhabitants, from August 26 to 30.

It must be a matter of interest to us to note that at the time the Convention was being held no less than 25,000 visitors were present in Cologne, whilst only about a week previously there were some 4,000 English visitors alone in this beautiful city, with its magnificent cathedral, its pleasant river and scenery, its fine walks and gardens, and last, but not least, would I mention its fine zoological gardens, noted throughout the Continent for the great number of its occupants.

As one of the appointed judges, I had to be there early; and the first notable personality it was my pleasure to meet was that of Dr. Dzierzon—wearing no less than seven decorations—whose name must ever be associated with bee-keeping and the theory which partly bears his name.

Though over seventy years of age, this notable bee-keeper made a point of being present again at this, the forty-third, Congress (but the first held in conjunction with the Central Bee-keepers' Association for Germany), and, with the exception of three, Dr. Dzierzon has attended every meeting from their commencement.

The exhibits were staged in the Victoria Hall, save the live bees, which had to occupy an open space not a stone's throw from the hall.

The exhibition was opened on Saturday, August 26, several public characters, including the Mayor of Cologne, taking part.

Judging began on the conclusion of the opening ceremony, and a really hard day's work it was, due in a great measure to the entrance of the general public while it was going on, which caused loss of time, in addition to annoyance and inconvenience, to the judges.

The exhibits were arranged in five groups, as follows:—(1) Live bees; (2) hives and skeps; (3) appliances; (4) honey, wax, and honey products; (5) bee literature. The number of judges averaged five to each group, though I am sure three would have been ample for doing the work well.

Group 1 was exceedingly well represented, and included in all about 150 nuclei skeps and observatory hives stocked with live bees, blacks, Ligurians, Carniolans, and hybrids.

The majority of the skeps containing bees were smeared inside and out with cowdung! I wonder what British bee-keepers will think of this!

Mr. Ambrozic, from Oberkrain, Austria, was present with a large number of stocks of Carniolian bees.

In Group 2, the multitudes of hives of all kinds of patterns and shapes, of wood and straw, including the "Bogenstülper," would have astonished many of your readers.

Yet I could find only one hive that showed any *marked* leaning towards our English ideas, and although such a hive as the one I have referred to would run no chance whatever on an English show bench, I was pleased to see that a prize of 20s. and a bronze medal were awarded to it. The more I see of German hives the less I like them; the frames are either too small or too large, and generally fit badly.

The group which included honey, wax, and honey-products was the largest of the whole, and many collections were artistically arranged, and apparently without any thought of the expense or trouble involved. In the centre of one large hall stood an enormous column of wax, alternated in white and yellow with the date, Cologne arms, and sundry ornamentations worked into it; unfortunately, I omitted to measure its height at the time. Most of the honey was excellent and of very good colour, which I believe to be an improvement on previous years. On the other hand, the "honey wine," as it was called, was about the most abominable stuff it has ever been my lot to taste.

One of the best samples was that put up in a most appetising manner by a railway official who, using his spare moments in bee-pursuits, makes "honey wine" and honey vinegar, and such like products, and there can be no doubt that he does so to advantage.

Blocks of (home-produced) wax, weighing about 150 lb., were arranged on the tables, but I noticed that foreign wax came also into competition. Cough lozenges abounded, as did bonbons, cakes, biscuits, &c., of all kinds, made with pure honey. A collection of honey and honey adulterations also produced great interest.

Sales to the extent of 20 cwt. of honey and 2 cwt. of wax were effected by individual exhibitors.

Bee literature was (as is usual in Germany) well to the fore; but the most interesting exhibit in this group was a very nicely ar-

ranged herbarium of all kinds of bee-plants, besides cases of all kinds of combs, &c., showing the different cells and bees in all stages of their development, from the egg upward. A further exhibit worthy of note was the illustrated bee-book, by Reamur, translated into the German, and dating back to 1759.

In the appliance classes, though there was much of interest, nothing new was shown. The total amount of money prizes at our disposal amounted to about £100, in addition to which about *one hundred and sixty* gold, silver, and bronze medals were awarded, as well as 300 diplomas as certificates of merit, and other prizes given by individuals and societies.

The lectures came off on Monday, the 28th, the first lecturer being Dr. Dzierzon, who delivered the first of his two lectures on, "The Standard Frame, and the results of its use since its institution nineteen years ago."

It appeared to me that such a subject would possess interest only for German bee-keepers, as, of course, I consider that our British Standard frame cannot be surpassed, and practical experience in the use of both has taught me this.

Dr. Dzierzon declares that after nineteen years of usage the Standard frame, as adopted in Cologne when the Congress visited this city in 1880, still maintains its own, and has proved itself to be the best and most rational frame for use in these countries. As may naturally be expected, this declaration caused some difference of opinion, as was shown by the discussion which followed.

Other addresses followed and were exceedingly interesting, especially that of Mr. Lehzen, editor of the *Bienenwirtschaftliches Centralblatt* (Hanover), who chose as his subject, "What can the Bee-keepers of the Lüneburger Heath teach us by their ways and methods?" With a natural tendency towards the humorous side, Mr. Lehzen followed up his subject with great skill and some very useful and instructive remarks. Among other things he made mention of *forty-eight tons* (!) of honey being stored by some thrifty and clever bee-keeper against a "rainy day." We English might learn a lesson from this, for I am convinced that were honey sometimes kept in reserve, better prices would be available.

The Lüneburger Heath is that enormous piece of land covered so richly with heather and other bee-plants lying to the north-east of Hanover, and noted for its bee-keeping; but the secret of success lies greatly in the management of the bees in spite of the outside favourable conditions.

But most of the lectures contained nothing new; on the contrary, many English ideas in bee-keeping were given out as something entirely new, while plans long practised in England, such as "uniting," were given out as quite new and original.

On the second day, Dr. Dzierzon again lectured; this time on "The Groundlessness and 'Insecurity' of the New Theory." In his opening remarks, the venerable lecturer made mention of having, during his lifetime, written no less than 300 articles to the German *Bee Journal*, now edited by Mr. Dickel, and spoke of his feelings suffering somewhat keenly at the idea of the theory of parthenogenesis in bees only lasting for a lifetime, and that on the eve of his departure all the errors so long since abandoned should now be dug up again.

We are all acquainted with the theory of parthenogenesis, and as Dr. Dzierzon's remarks contained no new points worth recording, I need not go into detail. The same may be said of the lecture by Mr. Dickel which followed. He spoke, of course, in support of his own "pet" theory, though the new teaching is by no means generally well known. I nevertheless refrain from enlarging on his address for two reasons: firstly, his lecture contained nothing, so to speak, which he had not previously written either in his pamphlet or his bee-paper; and secondly, as soon as my much taken-up time will allow, I propose to contribute an article on this subject dealing with the matter more fully than I have done as yet and from a critical standpoint. Many months, however, must yet elapse before we shall be able to say with any certainty the "game is played out." In any case *the microscope must decide and will.*

Mr. Frendenstein, a firm opponent of this "Dickel" theory, also delivered a very good lecture on the same subject.

With the festive dinner and prize-giving the Congress was brought to a close, and one could not help feeling considerable reluctance in leaving the hall and parting from those whose acquaintance I had only so recently made, and who, amongst many others, had contributed so kindly to my enjoyment during the time spent in their midst.—R. Hamlyn-Harris, F.Z.S., F.E.S, &c., *Zübinger.*

Note.—Some time ago I sent a couple of frames to the Bee Journal office, and the Editors have kindly consented to show them at the October conversazione, so that any readers who are present will be able to inspect the German Standard frames for themselves.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

RECORD "TAKES" OF HONEY.

[3795.] I heartily congratulate "D. M. M." on his wonderful "take" of over 200 lb. of honey from a four-pound swarm. This is another instance of the almost incredible capacity of bees for storing honey, when circumstances and conditions are favourable. I

consider that if this hive had been worked for extracted honey, the yield would have been nearer 300 lb.

I certainly think that Glenlivet will compare favourably with Glenmay as a bee-district. I am also persuaded that not only Glenlivet, but many other places in Great Britain and Ireland, will compare favourably with Glenmay as honey-producing districts, and am already beginning to quake for my laurels.

The report from Donegal in last week's B.B.J. of an average of 171 lb. (mostly section-honey) from four hives is also very creditable. I would be glad if D. M. M. would let us know how he worked this hive; did he use drawn-out comb in sections, or foundation? Did he use full sheets, or simply starters of wax? What sort of section-crate did he use, and how many rows of sections did he have on the hive at once? Any other information would be appreciated not only by me, but by all others interested in honey production.

The clover yield in Glenmay was not an average one, but the heather yield was the best I have experienced, and it ceased very suddenly, owing, no doubt, to the drought. My best hive yelded 352 lb. extracted honey, and my average for nine hives was 232 lb. per hive.—LANCELOT QUAYLE, *Glenmay, Oct.* 14.

BEE PARASITES.

[3796.] My remarks on the par. 2,275 from W. B. B. (Leeds) are not at all "speculative," as Mr. Hamlyn-Harris flippantly styles them. I beg to reiterate that I suffer from the same annoyance as W. B. B., and quote his words, viz., "During the months of July and August every year we are terribly punished with a certain insect — which would seem to be invisible to the naked eye—constantly biting us and raising blisters just as if we had been bitten by the ordinary house flea. These insects infest the trees and plants all over the garden, though mainly where the hives are kept." That is what W. B. B. said. To my mind, what the "medical man" said, so far as the insect being a parasite of the bee was concerned, was effectively dealt with by the Editor in his reply, and needed no comment of mine; but the Editor was in doubt as to what this aggressive, bloodthirsty, invisible insect was, and in my humble opinion the excerpt from Mr. Somerville's book fits the case. I am constantly having specimens of my bees under the microscope, but have as yet found no parasite except the Braula.—JNO. W. SPENCER, *Atworth, Melksham.*

CRYSTALLISATION OF BEESWAX.

[3797.] Having read with much pleasure and interest Messrs. Dawson and Woodhead's paper, I am glad to be able to add a slight confirmation to their valuable work.

Some twenty to twenty-five years since we were using a quantity of beeswax for professional purposes, and the use of this necessitated the constant melting of the wax. On pouring the melted wax into thin shallow cakes, times innumerable we have watched the peculiar hexagonal markings produced on the surface. During the solidifying of the wax a beautiful tracery of network is produced over the surface, and each of these form centres of solidifying as the wax cools, thus a number of hexagon cells are produced with liquid (melted) wax in the centre of each; occasionally we added a small quantity of Venice turpentine to the melted wax. This always caused the markings to be more visibly defined.—DOUGLAS E. CAUSH, L.W.S.

LATE FORAGE FOR BEES.

[3798.] I should like to draw attention to the useful and ornamental properties of several of the new varieties of those late flowering herbaceous Asters, familiarly known as "Michaelmas daises." Some are extremely beautiful, especially those of semi-dwarf habit. The other morning I observed a light coloured, small, white flowering bush, I am not sure of the name (either *A. ericsidis* or *A. spicata*), covered with bees. It has a small white star-like blossom with a yellow eye, there are some varieties the bees greatly prefer to others, they bloom very late in the year and stand a good bit of frost.—*E. D. T., Eynsford.*

LATE FLOWERING LIME.

[3799.] Can any correspondent speak positively as to the real merits of the late flowering lime (*T. petiolaris*) as a source of honey supply. It is a query to me, for we have several large and beautiful trees of that variety in the Crystal Palace Park, and I can safely say they did us no perceptible good whatever, the bees prefering the brambles and what little clover they could find much farther away, a fact that speaks volumes to me, for they never make any mistakes. I might add, the trees were flowering here when the drought was at its height, and perhaps we owe their failure to this.—BEE BLOSSOM, *Norwood, S.E.*

THE "DICKEL" THEORY.

ASSISTING SCIENTIFIC RESEARCH.

[3800.] Kindly allow me, through the BEE JOURNAL, to thank those of your readers who have been good enough to forward material to me for the above purpose from time to time, and although I have replied to most individually, some packages were dispatched without name or address, and hence I could send no acknowledgment. In expressing my thanks and gratitude I should like to say that, in the majority of cases, the specimens sent afforded suitable objects for dissection and otherwise.

The results of my work will be made known in due course, after my troublesome and arduous researches are over; but, owing to numerous difficulties in connection therewith, I regret I cannot say yet when this will be.—R. H. HAMLYN-HARRIS, F.Z.S., F.E.S., &c.

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Our bee-garden picture this week shows what may be called the out-apiary of Mr. Francis Walker, Hon. Sec. of the Derbyshire Bee-keepers' Association. To possess an out-apiary—as the term is ordinarily used—means that its owner is a bee-keeper on a large scale, or, at least, one who in some measure depends upon bee-keeping for an appreciable portion of his income. This is what we suppose Mr. Walker has neither the time nor inclination for, being very fully occupied in other directions; and so he is content to look upon the bees as a pleasant and health-giving hobby, which takes him away into the pure air of the country whenever a spare day occurs. The hives seen in the picture form a portion of his apiary situated at Smalley, Derbyshire, where our friend has a country cottage, which he describes as "a quiet spot to spend a holiday and enjoy a revel among the bees."

MR. F. WALKER'S APIARY, SMALLEY, DERBYSHIRE.

Mr. Walker has been for several years past the assiduous Hon. Sec. of the D.B.K.A., and has successfully devoted a good deal of personal effort to the object of placing the association on a sound business basis. Regarding his bee-keeping experience, he writes:—

"I have been amongst bees ever since I could remember what a bee was or that it had power to sting. My early experience was among straw skeps, and I have even when young, bitterly regretted the destruction of bee-life in the sulphur pit.

"I have still a recollection of large earthen vessels full of rich, though dark, honey, the large cakes of golden wax, and bottles of sparkling mead. There was no trouble about the colour of honey in my early days, but now 'colour' appears to be one of the chief requisites, and ranks first in the eyes of our judges. So evident has this become that classes for dark honey are now included in our prize-schedules.

"Locality is, no doubt, a great factor in varying the shades of honey. Apiaries separated by only a few miles will produce distinctly separate samples.

"Sometimes it is the nature of the land and in others the varying 'flora,' or trees, which flourish there.

"I have tried various makes of hives, but for general use I prefer a good roomy, single hive with a zinc-covered roof. I am, however, of opinion that if a straw-panelled hive, similar to the one shown in the view, could be produced at a reasonable price, they would prove more suitable and comfortable to bee-life both in summer and winter than hives entirely made of wood.

"For winter supplies nothing seems to me so natural and satisfactory as the provision the bees collect and store for themselves; therefore I never rob the brood-nest, and the honey

in all second-rate shallow-frames or sections I give back to the bees. I consider candy to be useless unless water is obtainable or a sufficient supply of sealed stores are to hand in the hive. Bees will be frequently found dead in the spring although candy remains above the combs.

"The number of my stocks have varied from ten to thirty according to my success and the time at my disposal, and having no convenience for bees in town, they are located at the cottage apiary on the Derbyshire Hills, as shown in the view, where, in my leisure, or on Sundays, I visit them and spend a quiet, enjoyable holiday. A day at this cottage apiary, surrounded by nature in all her glory, is my ideal of an enjoyable holiday. Here pleasure, profit, and healthy recreation are secured at a minimum expense, while the pure air, sunshine, and change of scene there secured brings new pleasure, and makes life all the more worth living.

"The figure seen beside myself in the picture is that of my son, who assists me in working among the bees; moreover, he likes the work, and, being clever at carpentry, may possibly take to the bee industry as a business."

To the above we may add a few words regarding the busy life and public work in which our friend has not spared himself in labouring for the good of his fellow-man. His occupation is that of managing superintendent of the General and Cattle Markets at Derby, which, being very central, are esteemed by dealers as second to none in England. He is also interested in several friendly societies—including the Independent Order of Foresters, National Deposit Friendly Society; and is also a representative on the executive of the Friendly Societies' Council in Derby. In fact, as we have already said, Mr. Walker is actively engaged in doing good, and we may all wish him long life to continue his work.

SEASONABLE QUESTIONS.

PROPER TEMPERATURE FOR BROOD-REARING.

Question.—Can it be possible that 100 deg. of heat is required for brood-rearing? If I remember rightly I read a few days ago that 100 deg. is about the temperature the bees maintain inside the hive when rearing brood; and if the heat in the sun is greater than that, the bees, by fanning at the entrance, cause a current of air to pass through the hive so as not to allow the temperature of the hive to rise higher than this. It seems to me 100 is altogether too high, and that 80 to 85 is much more correct.

Answer.—I think I saw something similar to what the questioner alludes to, in one of the bee-papers; and this, together with what he says, leads me to believe that but few have a correct idea regarding the degree of warmth in which the bees keep the eggs, larvæ, pupæ, &c., during the time they are rearing their young. While nature has so ordained that a good colony of bees can form a living hive, as it were, in which to rear their brood, yet brood-rearing is very largely dependent on the hive; and before I take into consideration the real subject touched upon by the questioner I wish to say a few words regarding that part which the hive plays in this matter of brood-rearing.

In spring weather the capacity of a hive to retain warmth, the same coming in close contact with the bees, has much to do with prolific brood-rearing and the securing of our bees in time for the harvest. The more heat we can retain in the hives, the more honey we can save; for all are aware that the "fuel" which the bees "burn," so as to raise the temperature of the cluster to where they desire it, is honey. Again, the more fuel (honey) the bees burn, the sooner their life wears away; for it takes an effort, even on the part of the bee, to keep the furnace (the bee) heated, and filled with fuel as fast as it is consumed. Hence we see the important bearing that a good warm hive has in advancing our interests in the spring. Why do I say *in the spring*? Because at that season of the year the temperature outside the hive is very much lower than that which is required by the bees to rear brood, especially during the nights. If, as I saw in print not long ago, bees could rear brood with a temperature of only 60 deg, then there would not be so much need of a good warm hive, for we have many spring days wherein the mercury goes as high as and even higher than that. If those figures were correct, then our bees could rear brood in April and May, here in the North, to as good advantage as they do now in July and August. Then if the temperature of brood-rearing were only 80 to 85 deg., as our questioner seems to think, should the temperature run higher than this, would it not be unbearable by the brood? And if this were true, what would the bees do when the mercury stood about the "nineties" for days in succession, as we frequently have it, even in this locality. Would it be possible for the bees, by fanning the air, to give a less degree of heat than that very air contained?

Some years ago, having a desire to learn for a certainty of these things for myself, I began to experiment as follows: I procured a self-registering thermometer, and, placing it near the fire until it showed 125 deg. to 130 deg. of heat, I set the register, wrapped it in some heated cloths, and immediately placed it in the centre of the brood-nest of a medium-sized colony. This was on a very cool day, some time in the month of May—about the middle, as nearly as I can remember. That night water was frozen so as to form ice nearly as thick as window-glass, the time being selected on purpose. The next day, about two o'clock, it had warmed up enough so that the bees were flying freely, when I took out the thermometer and found that the coldest point

reached in the brood-nest during such a cold night was 92 deg. Since then I have tried the same experiment on both strong and weak colonies, although at no time since did it freeze so hard as at the first trial; yet in no colony that was rearing brood successfully did I ever obtain a less degree than the one mentioned, while some of the stronger colonies gave a temperature of 95 deg. on very cool nights—nights in which there was some frost.

Being satisfied that 92 deg. is the lowest point consistent with successful brood-rearing. I next went about finding what is the highest point the bees allow in their hive when the mercury is playing in the "nineties" in the shade. Accordingly, one very warm August morning I placed the thermometer in the centre of a very strong colony. This day gave promise of being a very warm one, it being 78 deg. in the shade before the sun was two hours high. At two o'clock that afternoon it was too warm to work out in the sun without danger to health, as from 90 deg. to 95 deg. was the range of temperature between 12 and 3 p.m., while the front of nearly every hive in the yard was covered with bees, with hundreds plying their wings at the entrance to keep the temperature as low as possible inside the hive. At about sunset the thermometer was lifted from the hive, when I found that the highest point reached was 98 deg. during that extremely warm afternoon. Since then I have tried similar experiments, but have never been able to secure quite as high a temperature, although on one other occasion it came within less than half a degree of 98 deg. In this way I found that, to rear brood successfully, the temperature of the hive must reach a point somewhere between 92 deg. and 98 deg., and any arrangement of hives that would keep it as near these points as possible, with the least expenditure of effort by the bees, would be the hive best suited to the wants of the apiarist. To this end I am very favourable to a chaff-packed hive, the same being painted a dark colour, and covered with a metal roof, the same being painted a dark colour also. The hive is allowed to stand in the sun thus till warm weather arrives and the bees become numerous, in order that the chaff and hive may absorb the heat from the rays of the sun during the day, and slowly give it off at night, thus helping the bees immensely in keeping up the desired temperature during the night. When it becomes steady, warm weather, with the bees numerous, with prospect of hot weather, then a shade-board is provided, the same being raised from 1 in. at the front side of the hive to 4 in. at the back, so that the air can circulate all over and about the shaded hive during the day, while from the chaff taking in much coolness during the night, which it gives off during the day, a uniform temperature is maintained, so that the bees are seldom driven from the sections, either by the cold of night or the heat of the day.

These points are well worth looking after if we would meet with the best success.—G. M. Doolittle in *Gleanings*.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of September, 1899, was £1,715.—*From a return furnished to the* British Bee Journal *by the Statistical Office, H.M. Customs.*

METEOROLOGICAL

Observations taken at Ketton, Stamford, Rutland, for the Week ending October 14, 1899.

1899.	Bar. in.	Tem. 9am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.	Wind.
Oct. 8..	30·35	39·7	60	30	30	44 6	—	NE
,, 9..	30·28	46 5	59	32	27	45·1	—	SE
,, 10..	30·20	48 5	63	33	30	47·6	—	SW
,, 11..	29 96	45·0	61	34	27	47·1	—	SW
,, 12..	29·53	51·5	66	43	23	54·2	·26	S
,, 13..	29 65	46·1	52	40	12	45 8	—	W
,, 14.	30 08	44·1	51	38	13	44·3	—	NW
Means ..	30·10	45 9	58·9	35·7	23 2	46 9	·26*	—

* Total, ·26 in.

Mean vapour tension, 0·258 in.; mean relative humidity, 83 per cent.; mean temp. of the dew point, 40°·8. The rainfall, viz., ·26 in., = 5,881·98 gallons, or 26·26 tons to the acre, or 1 30 lb. to the square foot. For the week ending October 7, the mean temp., viz., 47°·0, was − 4°·8, and the rainfall, viz., ·99 in., + ·27 in. The mean temp., September 24 to October 7, viz., 48°·4, is − 4°·3, and the rainfall, viz., 2·23 in., is + ·80 in.

Fred. Coventry.

The Vale, Ketton, Stamford, October 14.

Echoes from the Hives.

Harrogate.—The season 1899 commenced badly, but ended up well. After a cold spring, which kept the bees back, a moderate quantity of May blossom honey was gathered during the first week in June. We got very little clover honey, but a fair amount from the limes of splendid quality. I work for extracted honey and use principally shallow frames; the first of these which I put on (old but clean comb from last season) were filled and extracted three times over, and several combs built this year were extracted twice before they went to the moors. We take them a distance of twelve miles to the heather every year on a spring waggon. In preparing the hives for this journey we put on the supers at home and secure them so that the shaking of the waggon cannot move them, leaving no ventilation on top whatever (as is so often recommended). We also remove the ordinary

ventilation slides from the entrance, and replace them by a perforated zinc slide, this is all the ventilation we give, and if fastened in after work at night, and released before the sun is up next morning, it is all that is required. We have never had any accident through over heating, though we have carried them for fifteen years. We took the bees to the moor on August 12, the strong hives well supplied with shallow frames with drawn out combs, which they filled and sealed. I visited them on the 30th, took off four frames and replaced them with empty ones, the latter were pretty well filled but only partly sealed. When we brought the bees home on September 16 we weighed a large double hive (with bees at one end only), the weight when they left was 7 st. 5 lb., when they returned 11 st. 1 lb. This hive belonged to a neighbour. I had a similar hive with bees at both ends which did equally well—I had no means of weighing it, but getting it on and off the waggon, and up a steep railway bank, was quite enough for any two men. I had a single hive equally heavy, and my arms did not forget it for a week. All did well with one exception, the queen of which was discovered to be a drone breeder. We think there are specimens of late flowering lime in this district, we have certainly two or more kinds here—one light green leaf, which flowers well, and our bees work on the other too. The dark leafed lime has not flowered much this year compared with last, but our bees never seem to work on them. They are all young trees, but if half of them would flower, it would be grand for the bee-keepers.—*Geo. Duffield, October* 3, 1899.

South Bucks.—The weather of the last few days has been very acceptable to both the bees and the bee-keeper for putting the final touches to the hives in the way of packing and preparing for winter. In this district I think every one can congratulate himself on it having been one of the very best seasons on record. The cold winds of May gave place to a bright and warm June; stocks were soon up to full strength, and storing rapidly from the white clover, which the bees worked to the fullest extent. The limes, too, have yielded a good harvest. There are two things which have been notable by their absence this season, never have I known such a scarcity of swarms or honey-dew, of the former out of the whole of my stocks I did not get a single one, and of honey-dew I have not seen a trace in this district, which speaks well for the honey crop of 1899. My own average this year is 51¼ lb. per hive, the greater part being sections, all of which I have disposed of at a fair price, though I found rather more difficulty in getting rid of my crop this year than ever before, owing to a great many novices putting theirs on the market at extremely low prices. I have seen honey in sections, of the best quality, sold at 5½d. per lb., this being the way of the novice, who thinks that because there is such a honey glut he will never find a purchaser for his stock. He quite overlooks the possibility of there being very little honey gathered next season, and in consequence the profits may be nil.—G. Sawyer, *October* 13.

Queries and Replies.

[2291.] *Suspected Loss of Queen after Uniting.*—Will you kindly advise me what to do with a stock of bees which have been rather weak all the summer? On September 13 I took away the queen, and put in two lots of driven bees with them, each lot having a queen. I, of course, expected to see one of the two queens thrown out in a day or two, but this did not happen till yesterday, when I found the one enclosed. Will you, therefore, kindly say (1) is it possible that the two queens could have lived in harmony for nearly a month before one of them was killed? or (2) can any mishap have happened to the only queen left in the hive after uniting, and that the colony is now queenless? (3) If this is so, had I better get a queen at once? I have not searched the combs over for a queen, as there are so many bees in the hive that I should hardly be able to find her if there was one. I might say that I examined the combs to see what stores they had, as recommended in "Useful Hints" on September 28, and have not been to the hive by daylight since then till yesterday, when I found this queen thrown out. I have been a bee-keeper for about two years, and for the last fifteen months have subscribed to the Bee Journal, which I find a great help to me; but being only a working man, without too much spare cash, I don't want to go to the expense of purchasing a queen unless it is really necessary. I have been slow-feeding the bees in hive for about a month, and now think they have enough to last the winter, trusting to have your valuable advice.—J. L., *Upper Parkstone, Dorset.*

Reply.—1. Cases do occur when two queens live in a hive for several weeks, but in the end one is sure to be killed and cast out. In your case the surplus queen may have been killed some time ago, and after death been jammed in some corner, rendering it difficult for the bees to remove the body. 2. A "mishap" is, of course, always possible, and only inspection can clear up the point. 3. It would be very unwise to incur expense in buying a queen without first assuring yourself that the stock is really queenless—in fact, the probability is that the surviving queen is all right, and if you examine the combs (on a warm day) for eggs or very young larvæ—keeping a look-out for the queen, of cours[illegible] for newly-formed queen-cells—th[illegible] in determining whether or not the stock is queenless.

[2292.] *Driven Bees on Foundation in October.*—Can you kindly tell me (1) what had I better do with a weak stock of driven bees in an unpainted bar-frame hive? I have put them on three frames fitted with foundation, and am feeding them up. The man I bought them from says he saw the queen go in before he sent them, but, although I have looked, I have not succeeded in finding her. The bees seemed very restless, and kept flying round the hive and about the entrance. 2. How can I tell, from appearances outside, if there is a queen? 3. Do queens mate with drones of a different variety when they fly from a hive? 4. Is a queen, when bought through your prepaid advertisements, mated? If prolific—say Ligurian—does she breed only Ligurian bees, or is there a chance of her having been crossed?—A. R. BARKER, *Harrow.*

REPLY.—1. At this season there is no hope of weak lots of bees drawing out foundation, or even storing enough syrup to last the winter. Join them to the next hive. 2. From the restlessness of the bees it would seem that the queen may be missing, but it is difficult for us to say, especially taking into account the bare, unfurnished condition of the hive. You cannot, under such circumstances, judge from the outside. 3. We should say no. 4. All respectable dealers send out queens mated unless advertised as virgins. A purely-mated Ligurian would breed pure Italian bees. If a pure, unmated Ligurian queen was mated in this country there is a great chance of her progeny being crossed bees or hybrids.

[2293.] *Removing Honey from Brood-chamber.*—Would you spare a beginner a corner in your valuable journal? I started bee-keeping in June last, and now possess three stocks, and am anxious to settle them comfortably for the winter. There are, however, a few points upon which I should like information:—1. Should the surplus frames be removed before or after the autumn feeding? 2. Should the frames be removed from the centre or the outside? 3. The bees are scattered all over the ten frames—how is it possible to ascertain how many bars they will cover when all are grouped together? 4. Is rapid or slow feeding the better, and how long should this feeding be kept up? 5. Some of the comb on the bars is a dark brown and some perfectly white—what is the cause of this difference? 6. Years ago, before frame hives were generally used, the honey we got had a quantity of what country folks call "bee bread" in it—a dark brown granular substance, very disagreeable to the palate. What was this? I am sure some of the information I ask for would be of use to other beginners besides myself.—MAHI, *Ealing.*

REPLY.—1. We do not advise the removal of honey from brood-chambers at all, unless combs are so full as to interfere with the queen laying. It should be done before feeding, but if the brood chamber is so full of honey as to restrict laying powers of the queen the necessity for feeding is non-existent. 2. Remove one full comb from the outside, and place an empty comb in the centre for the bees to cluster upon. 3 If the bees are strong, and cover ten frames, well stocked with food, and have some brood, carefully pack them up for winter, as per "Guide Book," and leave well alone until the spring. 4. This depends upon the season of the year. Rapid feeding is best at the present time if bees can be got to take the syrup down, if not candy must be used. Feed until hive contains about 30 lb. of food. 5. The discoloration is caused by the age of combs and their having been used for brood-rearing. 6. Pollen, not unfrequently mixed with young brood, expressed with honey from skeps, would be truly disagreeable.

BEE-KEEPING AS A PROFESSION.

I believe it is well understood that bee-keeping is not an occupation in which we can easily become wealthy. In the very nature of things it cannot be otherwise. Like the keeping of poultry, the raising of small fruits, gardening, and other minor branches of agriculture, the keeping of bees in localities adapted to the business can be depended upon to furnish their owner with a comfortable living; but such fortunes as are amassed in merchandising and manufacturing can never be hoped for by the bee-keeper.

Fortunately, however, the perfection of a man's happiness bears but little relation to the size of his fortune. Many a man with the hum of bees over his head finds happiness sweeter and deeper than ever comes to the merchant prince with his cares and his thousands. Bee-keeping is an ennobling pursuit. It keeps a man close to Nature's heart. It brings out the best that is in him. But can it be depended upon, year after year, as a means of supporting one's family? In some localities it can; in others it cannot. Where there is only one source of honey, and that an unreliable one, a man learns, sooner or later, that he cannot depend upon bees alone.

If a man is to adopt bee-keeping as a profession he must choose a location possessing at least one unfailing source of honey, or else several sources, some one or more of which will be quite likely to furnish a crop.

Many who attempt bee-keeping as a speciality are lacking in business methods. They attempt too many makeshifts in the way of hives, implements, buildings, and the like. To become a successful professional bee-keeper a man must first find a proper locality, as I have just explained; then he must secure the best stock procurable; put up suitable buildings, wintering cellars, if necessary; have the best of hives and implements; and *keep a large number of colonies.* I think many fail in this point. They keep only bees enough to bring in an income during a good year, or

possibly in an average year, and when one poor year follows another, two or three times in succession, want stares them in the face. Keep bees enough so that when there is a good year or two, enough money may be made to tide over the poor seasons that are sure to come. The very fact that the bees are scattered about in out-apiaries, several miles apart, adds to the certainty of a crop; as one locality often yields a fair crop, while another a few miles away yields nothing.

With a man adapted to the business, a suitable locality, and the adoption of sound business methods, bee-keeping will compare favourably with other rural pursuits.—*American Bee Journal.*

THE LATE-FLOWERING LIME.

Referring to the recent correspondence in our columns regarding the late-flowering lime (Tilia petiolaris), Messrs. Dicksons, Limited, nurserymen, of Chester, write:—"We beg to draw your attention to the distinction between *Tilia pendula*, which is a variety of *T. vulgaris* (syn. *Europea*), and *T. alba pendula*, which latter is an American variety."

Bee Shows to Come.

September 25 to October 21, at St. James' Hall, Manchester. Show of British honey, honey-vinegar, and mead, under the auspices of the Lancashire Bee-keepers' Association, at the third British and Colonial Industrial Exhibition.

October 17 to 20 at the Agricultural Hall, London.—Show of Honey and Bee-produce in connection with the British Dairy Farmers' Association Numerous and liberal prizes for honey, &c.

November 16. At the Town Hall, Ludlow. Honey Show in connection with the Chrysanthemum and Fruit Society's Exhibition. Two open classes for honey (Sixes). Schedules, &c., from John Palmer, 17, Brand-lane, Ludlow. **Entries close November 7.**

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

THOMAS MARSH (Tunbridge Wells).—*Swarm Deserting Hive.*—Without further particulars we are unable to say why the bees deserted the hive in question, leaving 40 lb. of honey therein. We think the queen must have been lost or destroyed some time prior to their departure, and it may be that when the young queen left the hive for mating purposes the bees went with her.

I. C. (co. Donegal).—*Preventing Granulation of Honey.*—There are no means of preventing honey from granulating, and the only way of retarding granulation is to keep the honey in a warm, dry cupboard near where a fire burns daily. To add glucose in order to prevent granulation is to be guilty of adulteration, which is another word for fraud. Our advertising pages are the only means (outside personal effort) we know of for selling honey.

J. AUKEN (Kinlock).—*Race of Bees.*—The bees sent are hybrids. The introduction of another queen would in time restock the hive with her bees. If they are, as you say, "splendid workers," it seems a pity to eliminate this characteristic, unless, indeed, they are very vicious. Hybrid bees, unless first cross, often develop a bad temperament, resenting interference.

YOUNG RECRUIT (Charing, Kent).—*Suspected Comb.*—The piece of comb marked 1 was perfectly alive with the larvæ of wax-moth. The two sealed cells of No. 2 contained only nearly matured bees, and nothing worse in cells than old pollen.

H. K. (Lancs.).—*Sending Comb by Post.*—The comb arrived so crushed in post as to be totally unfit for examination. What possible protection can a simple ordinary envelope be for sending comb by post?

M. BURLS (Bishops Stortford).—*Insect Nomenclature.*—If a specimen could be sent, we would do our best to name it for you; but we cannot do this from the description.

E. S. W. (Denbigh).—*Suspected Foul Brood.*—We have examined the slide sent, but can trace no bacillus alvei therein. The germ present is the common putrifactive microbe, so far as we can discover, but the specimen on the slide is mainly extraneous matter.

A correspondent (D. C., Boston) writes:—Will any of your readers inform me how to make honey tablets like those sold at one penny each at the Yorkshire bee tent at Hull Agricultural Show held this summer?

W. HANDBY (Herefordshire).—*Two Queens in a Hive.*—It appears to us as if the bees had, for reasons of their own, determined on deposing the old queen, and raising a young one to succeed her. When this occurs, the removal of queen-cells usually causes others to be built; as was the case in your hive. It is also known that in most of the instances where two queens are found living in amity in one hive, it happens when old queens are being superseded. In the end, however, the old queen comes to grief, and the young mother remains to illustrate the "survival of the fittest."

ERRATA.—In awards of the Groceries Exhibition on page 399, read T. T. Minns, Murton Colliery, instead of T. W. Minno, &c., and in list of subscribers, "Bath Bee Case," Mr. F. H. Hoole's name, which appeared in a previous issue, should be omitted, and the name of Mr. F. V. Hadlow substituted.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

FOR SALE, 17 doz. SECTIONS, well filled and clean, 7s. per doz. COCKS, Standon, Herts. 557

THREE dozen good SECTIONS DOWN HONEY, 7s. 6d. doz., free. WENTWORTH, Avebury, Wilts. 553

1899 ENGLISH QUEENS; very fine; few to spare; 2s. 6d. HOWES, Brecknock-road, Bristol.

Editorial, Notices, &c.

THE DAIRY SHOW.

The twenty-fourth annual show of the British Dairy Farmers' Association opened at the Royal Agricultural Hall, London, on Tuesday, October 17, and was continued till the following Friday. In point of entries for all departments, this year's exhibition was second in extent to the record show of 1897 (when the total entries reached 7,973, against 7,741 last week), but for general excellence it has never been surpassed.

The honey section of the show of 1899, however, exceeds the previous highest on record by no fewer than seventy-four exhibits. Indeed, it affords a satisfactory indication of the steady progress of bee-keeping to note the continuous advance during the period covered, as shown by the entries for the past seven years, which are as under :—

1893.	1894.	1895.	1896.	1897.	1898.	1899.
76	84	121	167	173	163	207

The falling off in '98 is, of course, accounted for by its being "the year of honey dew."

We were sorry at being compelled—for the first time—to forego the pleasure of a personal visit to the "Dairy" through absence from London, but according to reports the display was an exceptionally fine one. Indeed, it could hardly have been otherwise in view of the many capital shows held in various parts of the kingdom during 1899, and the fact that a large proportion of winning exhibits are reserved for a final "tussle" for supremacy at the Dairy Show. We number, however, among our readers so many capable bee-men, who were visitors to the show last week, that it is not too much to hope that some one will send a few lines conveying their "impressions" of the show as a whole for publication in our next issue.

The judges were Mr. Jesse Garratt, Meopham, and Mr. Ernest Walker, Worcester Park, Surrey, their awards being as follows :—

Twelve 1-lb Jars (Light) Extracted Honey.—1st (and B.B.K.A. Silver Medal), Thomas Blake, Broughton, Hants ; 2nd, H. F. Beale, Andover ; 3rd, J. Edwards, Callington, Cornwall ; 4th, W. H. Woods, Hemingford Grey, Hunts ; 5th, H. Rowell, Hook, Hants. Reserve No., H. W. Seymour, Henley-on-Thames. V.h.c., G. Dear, Woodford, Wilts ; Mrs. W. Woodley, Newbury ; W. Woodley, Newbury; W. Crooke, Navenby, Lincs. H.c., A. G. Pugh, Beeston, Notts ; W. Hambly, Cutlmwith, Cornwall; J. P. W. Lightfoot, Pickering, Yorks ; C. Whiting, Hundon, Suffolk ; G. Langrish, Frensham, Surrey ; F. Chapman, Wells, Som. ; E. Oakes, Broseley, Salop ; W. Spense, Newtown, Wales ; C. J. L. Murray, Lowthorpe, Yorks ; P. B. Govett, Tideford, Cornwall ; P. Scattergood, Stapleford, Notts ; H. M. Turner, Oxford.

Twelve 1-lb. Jars (Dark) Extracted Honey (other than Heather).—1st, C. Whiting ; 2nd, W. White Lewis, Farnham, Surrey ; 3rd, J. D. Willcox, Bedminster, Bristol ; 4th, J. R. Truss, Ufford Heath, Lincs ; 5th, G. Dear. Reserve No., E. Oakes. V.h.c., W. Hinson, Wallington, Surrey ; F. J. Hall, Lichfield, Staffs ; H. Seamark, Willingham, Cambs. H.c., E. C. R. White, Holbury Mill, near Romsey ; Mrs. H. H. Woosnam, Bickington, Newton Abbot ; Wilfrid Gutch, York. C., H. W. Seymour; F. G. Kimber, Chigwell, Essex ; R. Brown, Somersham, Hunts.

Twelve 1-lb. Jars Extracted Heather Honey.—1st, E. C. R. White ; 2nd, W. Gutch ; 3rd, T. Richards, Church Gresley. Reserve No., J. Berry, Llanrwst, Wales. H.c., W. Sproston, Great Haywood, Staffs.

Twelve 1-lb. Jars Granulated Honey.—1st, H. W. Seymour ; 2nd, P. B. Govett. Reserve No., C. Whiting. H.c., J. Berry.

Twelve 1-lb. Sections.—1st (and B.B.K.A. Bronze Medal), Mrs. W. Woodley ; 2nd, W. Woodley ; 3rd, J. Trebble, Romansleigh, Devon ; 4th, W. Woodley. Reserve No., P. B. Govett. V.h.c., H. F. Beale. H.c., E C. R. White, C. Whiting, J. H. Howard, Holme, Hunts ; F. Knight, Horsham, Sussex ; A. W. Weatherhogg, Willoughton, Lincs ; J. Sopp, Crowmarsh. C., Gen. Sir Stanley Edwardes, Farningham, Kent ; G. Sawyer, Marlow, Bucks.

Twelve 1-lb. Sections (Heather).—1st, J. McDonald, Lynchat, Inverness; 2nd, Mrs. B. M. Kirk, Easingwold, Yorks. Reserve No , J. P. W. Lightfoot. V.h.c., T. Walker, Esthwaite, N. Lancs. H.c., E. C. R. White.

Display of Comb and Extracted Honey.—1st, W. Woodley ; 2nd, H. W. Seymour ; 3rd, H. W. Seymour.

Beeswax.—1st (and B.B.K.A. Certificate), T. Blake ; 2nd, J. Berry. Reserve No., Mrs. H. H. Woosnam. C., G. W. Kirby, Bristol ; H. W. Seymour.

Beeswax in Commercial Form.—1st, J. Edwards ; 2nd, J. Berry ; 3rd, W. H. Woods. Reserve No., J. Berry. H.c., J. D. Willcox ; c., W. Coxall, Hasingfield, Cambs ; P. B. Govett.

Interesting and Instructive Exhibit of a Practical Nature.—1st, P. Scattergood ; 2nd, H. W. Seymour.

Interesting and Instructive Exhibit of a Scientific Nature.—1st, F. W. L. Sladen, Ripple Court, Dover ; 2nd, Dr. P. Sharp, Brant Broughton.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held on Thursday, the 19th inst., at 105, Jermyn-street, St. James', the Hon. and Rev. Henry Bligh in the chair. There were also present :—The Rev. W. E. Burkitt, Major Fair, Messrs. R. T. Andrews, J. M. Hooker, A. G. Pugh, Walter S. Reid, Peter Scattergood, F. B. White, Ernest Walker, and

Edwin H. Young, Secretary. Several letters apologising for non-attendance were received. The business of the Council was purely formal, and on its conclusion preparation was made for the Conversazione at 5 p.m.

CONVERSAZIONE.

At 5 p.m. the members and visitors reassembled for the conversazione, when the spacious board-room was packed with a huge audience, several of those present being unable to obtain seats. Mr. Till, Vice-Chairman, B.B.K.A., presided, and among those present were the Hon. and Rev. H. Bligh, Rev. W. B. Burkitt, General Sir Stanley Edwardes, Colonel A., Fishe, Major Fair, Messrs. R. T. Andrews, J. R. Aubry, R. C. Blundell, H. W. Brice. E. E. Brown, J. Brown (Polyphant), R Brown, George Buller, E. Bontoft, T. Bevan, S. Canning, K. Dean, H. J. Edmunds, J. Edwards, G. F. O'Fflahertie, S. W. Filtness, F. Gordon, J. Garratt, W, Gadsby, J. M. Hooker, George Hayes, W. Hynds, J. H. Howard, A. T. Horlick, A. Humphries, W. Hawkes, W. Hynds, John C. Harker, Henry Jonas, H. F. Jolly, G. W. Kirby, E. Longhurst, W. P. Meadows, W. Martin, R. Mossop, W. B. Murton, A. H. Miller, S. H. Miles, J. H. New, G. Nye, J. Nightingale, A. G. Pugh, Walter S. Reid, Peter Scattergood, Allen Sharp, W. J. Sheppard, F. Sworder, H. W. Seymour, H. Sayers, jun., E. H. Taylor, A. Twinn, W. J. Tyrell, Ernest H. Walker, F. B. White, F. H. White, A. D. Woodley, Wm. Woodley, W. H. Woods, T. W. White, F. G. White, George Wells, John Walton, H. J. Wisbey, C. Whiting, and Edwin H. Young.

There were also present a good number of ladies including Miss Gayton, Miss L. M. Carr, Mrs. R. Brown, Miss Brown, Mrs. and Miss Longhurst, Mrs. and Miss Woodley, and others.

The Chairman opened the proceedings with a few remarks in reference to the honey display at the Royal Dairy Show. He thought his hearers would be unanimously of opinion that this year's exhibit surpassed that of any previous show in quantity, quality, and condition. Other gratifying facts were that more counties had competed than usual, and that Wales had furnished a larger supply than heretofore. Unfortunately, there were none from Ireland; but the circumstance that the exhibits were collected from a much wider area than in past years was a very satisfactory evidence that bee-keeping as an industry was spreading. He hoped they would be able to record similar progress in future. He had made a rough analysis of the source of the exhibits, from which it appeared that Yorkshire was easily first with twenty entries. It was only reasonable that that should be so, considering that Yorks was the largest county. Naturally, perhaps, he would like to see Kent to the front. The reason why that county was so far behind this year was, that they had been visited with a bad spring, by which not only most of the fruit blossom was lost, but nearly all the sainfoin crop. He thought that on examination the exhibits of the Dairy Show would be found to reflect the prosperity of the honey industry in each county, that was that the agricultural and fruit produce of the country varied in proportion to the honey harvest. Next to Yorkshire came Oxford with sixteen, then Somerset and Hants paired with thirteen. Hants, he was glad to note, by the way, was fast coming to the front in bee-keeping. Then followed Hunts with eleven, Cambridgeshire with ten, after which Berks, Cornwall, Kent, and Surrey tied with nine each. He was glad especially to see the resuscitation of Surrey, which did not put in an appearance last year; and he complimented the secretary of that association, whom he had the pleasure of seeing present, on his energy in whipping up exhibitors. Lincolnshire, Notts., and Wilts came next with seven, Essex and Herts six, Middlesex, Shropshire and Staffordshire five, Devon, Northumberland and Sussex three, Beds, Isle of Man and Lancashire two, and, lastly, Bucks, Cheshire, Derby, and Warwickshire one. The Principality was represented with a highly creditable show of ten and Scotland with five exhibits. He was sorry to find that Northamptonshire did not appear on the list. There were two or three exhibits of special merit, but perhaps it would be invidious to particularise them where all were excellent. There was also a very fine display of wax, and on the whole he had come to the conclusion that there were too few prizes. That fact struck others who had seen the splendid show, and perhaps had caused a little dissatisfaction. One curious circumstance was that in the heather honey class Hants had beaten Yorkshire. Some very superior specimens from the former county were produced by Mr. White, who was accustomed to take his hives to a spot in the New Forest near Rufus' stone, where the bees gathered their supply from the bell heather, and afterwards from the ling heather. The former variety bloomed first. He had on the table a sample of excellent honey obtained from bell heather. One feeling of regret he had was that they were not able to obtain a better position for their exhibits. The honey had been relegated to a stand beside a dark wall, where it consequently shone to less effect than if it were under the skylight. If the bottles had been placed in the centre of the hall it might have been possible for the light to be transmitted through them, which would be a great advantage. He had not had time to analyse the prizes. There were several interesting subjects for discussion that evening, as well as objects appertaining to bee-keeping to be inspected and examined. Mr. Brown had brought a box full of live hornets, which had been caught by his son. One very important question for debate was the desirability of introducing an extra class at the show in

extracted honey. At present there was great difficulty in placing the different colours in the light or dark honey classes. There ought to be some standard. He proposed that there should be a third class. He had spoken to Mr. Woodley, Mr. Howard, and others on the subject. One gentleman suggested an intermediate class between light and dark honey. Standards might be adopted of light and dark colours, so that all honey as light or paler than the light standard should be put in the light honey class, while all honey darker, and of colours graduated up to the dark honey standard should take their place in the intermediate class, and all honey of a still deeper shade relegated to the dark honey class. It was also recommended that two chromos representing the given standards should be sent out with the schedules, it being understood that the colours intended were such as they would appear without the aid of transmitted light; that was, the standards should be adopted from the colour of the selected samples in bottles placed on a piece of white paper, no special light being shed on them. Another interesting topic was a discovery of Mr. Reid's that there are special sorts of lime trees which bloom a month later than the ordinary lime, and therefore are of special value to beekeepers.

Mr. Young (Sec. B.B.K.A.), invited suggestions as regards the arrangements of the Dairy Show which might be the basis of future improvements.

Mr. Scattergood drew attention to a matter affecting all the shows given under the auspices of the B.B.K.A., and that was the width of the edging round sections. He thought it was time to abolish the regulations with regard to paper-lace edging, a matter which might, in view of the results of the "Royal" Show at Maidstone, and the Grocers' Exhibition, reported in the B.J., be left to the judges to decide. No judge should or would be deceived by sections being overdressed. It seemed to him unfair to disqualify competitors for a trifling mistake in the width of the dressing. He would like to see the subject discussed in its widest aspect in the B.J. He was not an exhibitor of sections, therefore he spoke disinterestedly.

Mr. J. H. Howard said he had examined carefully the rules, but saw nothing whatever relative to dressing or labels. He was glad to find that was so. He quite agreed with Mr. Scattergood that such matters should be left to the judges entirely.

Mr. Hooker remarked that the Council of Dairy Farmers' Association acted quite independently of the B.B.K.A.

Mr. Young said that no suggestions had ever been made that there should be a rule regulating the width of comb surface visible on the sections. Mr. Hooker was not quite correct in saying that no directions had been given about labels. The only stipulation was hat there should be no marks on the exhibits which would indicate ownership. A county label would to some extent do that. He was glad that the matter of paper-lace edging had been brought forward, because if there was any feeling against it, now was the time to say so, in order that such expression might have its effect in the preparation of next year's schedules.

Mr. Woodley said that the subject had been brought forward at an opportune moment, and he thought that the restriction about width of edging should be done away with. He endorsed Mr. Howard's view that the judges were competent to deal with such a question. It was seen in the report of the "Royal" that some six of the best exhibits were disqualified on account of non-compliance with the rule about edging, so that there might be a matter of only one-sixteenth of an inch of paper between them and the prize. Thus it was possible for an inferior exhibit to triumph over a superior one if the small detail referred to had been carefully complied with. Every one knew that it was almost impossible in glassing a number of sections to keep exactly within the limits laid down. He thought the rule should be dispensed with.

Mr. Hooker and the Chairman contended that there was nothing unfair in the rule referred to, which applied to all alike, and that exhibitors should take the trouble to read it closely and conform thereto.

General Sir Stanley Edwardes thought there would be no difficulty in getting an edging of such a width as would comply with the rule, which could be adopted by bee-keepers as the uniform edging, when there need be no mistakes nor dissatisfaction.

In reply to Mr. Wood, Mr. Hooker and Mr. Young explained that the rule applying to measurement of paper-lace edging must be understood as referring only to the extreme point of the paper, that was up to the limit at which the edging did not vary.

Mr. Andrews hoped that judges of honey would not be allowed to degenerate into mere judges of edging. They should be allowed full discretion in dealing with the honey, irrespective of any dressing.

The Chairman hoped that the matter would be ventilated in the B.B.J., so that the general feeling of bee-keepers might be ascertained. There was another subject that seemed to him important, viz., the difference in the size of glass honey jars. He thought the honey in jars ought to be as nearly as possible 16 oz., but some jars contain as much as 18 oz., while others only held 14 oz. He thought that all honey should be put up in honest 1-lb. jars.

Mr. Hooker pointed out that in such cases there must be a standard of density for honey.

The discussion was continued, several speakers bearing witness to the varying weight of honey sold in what appeared to be 1-lb. jars. One gentleman explaining that many of the foreign-made bottles were manu-

factured on the Continent, according to the litre system; therefore, to insist on a 16 oz. jar would be to insist on having an English made one.

Mr. Howard said that if exhibitors would have none but English jars, they would probably have to go without any at all. He had placed an order twelve months ago with an English firm, and the jars were not yet delivered, although partially paid for.

Mr. Hooker said there would be no difficulty in obtaining any size required, if the purchaser was prepared to pay for the mould.

Mr. Gordon considered the matter of lace edging unimportant, and that it was quite absurd to speak of the rule as unfair. If exhibitors would not take the trouble to prepare a dozen sections in strict accordance with every detail of the rules they did not deserve to win prizes. For himself, however, he could not understand how a section could be possibly judged until the honey had been sampled. He supposed all bee-keepers were honest, but the cells might be filled with syrup. Certainly it was as important to know the quality of the honey as the finish of the dressing.

Mr. Hooker said the awards were intended more as a recognition of good management on the part of the exhibitor in getting his sections well filled and sealed than otherwise. The production of good flavoured honey was an accident of locality.

Mr. Gordon said that under those circumstances the bestowal of the first prize would be no guide to a purchaser in search of the best article.

The Chairman agreed with Mr. Hooker's view.

Mr. Walter Reid recognised the difficulty raised by Mr. Gordon, while also acknowledging the importance of well-prepared and good-looking sections. He would not, however, consider he had done his duty as a judge if he omitted to taste exhibits. It would only be necessary to open one of the cells to do this. That, of course, involved taking the glass off, but one of the conditions of showing was that sections must be "easily accessible to judges."

Mr. Pugh said his plan in judging was to select those exhibits which looked likely to secure prizes, and then to break one cell and taste the contents. He thought it was ridiculous to regard good sealing as the only thing desirable.

General Sir Stanley Edwardes had noticed in the list of awards that all the prizes (1st, 2nd, and 3rd) in one class had gone to the same exhibitor. It seemed to him that it would be possible for Mr. Woodley (the exhibitor referred to) to produce fifty or a 100 sections and sweep the board as regards prizes. He (Sir Stanley) had examined these sections in question that day, and could not tell the first from the second prize, so far as the appearance of the honey was concerned. It ought not, in his opinion, to be possible for an exhibitor to take more than one prize in each class. He was himself secretary of a show where this course was followed, but the system pursued at the Dairy Show was calculated to discourage intending exhibitors. He spoke without animus, for he did not know Mr. Woodley, but, at any rate, could congratulate that gentleman on the possession of excellent honey.

Mr. Young explained there was no rule at present which would prevent competitors from making three entries in any class they pleased. The same applied to other produce exhibited at the show—thus, in the cream section it would be quite possible for one exhibitor to take all the prizes. Many persons would not make more than one entry if they could only take one prize.

(*Report will be continued next week.*)

THE HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

The illustration on page 423 depicts the neat and orderly apiary of Mr. J. Waterfield, junr., another active and zealous hon. sec. of his county B.K.A., who contrives to get through his voluntary labour for the good of bee-keeping with thoroughness, while retaining the cordial goodwill of all his members. The notes sent at our request are so complete as to need no addition from us. He says :—

"My bee-keeping experience commenced so early in life that I may fairly claim to be a bred-and-born bee-keeper, for my father was a great enthusiast in the craft long before I was born, and kept bees on the very site which the present apiary occupies. And what a sight the old apiary presented in my early days! I can well remember from seventy to eighty straw skeps standing in long rows in the garden, which is in close proximity to the house and adjoining the main street of the village of Kibworth, about ten miles from Leicester.

"I received my inoculation against stings further back than memory carries me, as I have been told by my parents of the severe stinging I got when only a youngster in petticoats, all, of course, through mischievously poking a stick into one of the hives to 'see if the bees would come out.' The only hives I had ever seen in my father's possession were straw skeps and an odd bell-glass or two. By the way, I think I am right in saying that a bell-glass of honey produced by my father was sent for exhibition at the first honey show held at the Crystal Palace in 1874.

"I have always taken a keen interest in bees and any book on the subject I came across when quite a lad was always a real treat to me, 'Bevan on the Honey Bee' being my favourite companion. Long before my father thought me capable of managing a stock of bees I had a great longing for a hive of my own. But my appeals did not meet with

success. Nothing daunted, however, and, juvenile as I was, I determined to have one, and set about the following deep-laid scheme to attain my end. I had somewhere come across an illustration of a box-hive, and from this I made one, after a fashion, out of a box. The next thing was to get bees in it, and as I could not persuade my father that my scheme would succeed, I had to devise some means of getting my box stocked with bees 'on the quiet.' I was ignorant of the fact that bees would not stay in the hive without a queen, but knowing they would go where there was any sweet-stuff to be had, I hit on the plan of baiting my hive with some pieces of old comb, and into the cells I poured some treacle! I shall for ever remember my joy on seeing bees going in and out, and felt quite sure I had caught a stock that would take to their new abode. But, alas, great was my disappointment on examining my hive that evening to find it tenantless, and my prize turned into a blank! In the end—and luckily for me—the head-master of the grammar school where I was educated was a bee-keeper, on the then new or bar-frame system, and becoming aware that I had a love for bees, he very kindly gave me a practical training in the management of a frame-hive, and put me in the way of making one, on the 'Cowan' principle. This my father was good enough to tenant with a swarm, and thus the establishment of my present apiary commenced. I have not increased my stocks very rapidly, as all the hives shown in the photograph are my own make, and it being only possible for me to get one, or at most two new ones made during the winter in readiness for swarms, I was, perforce, compelled to 'make haste slowly.' But I have tried to prevent swarming as much as possible, always working on the good old maxim of 'unity is strength.' Queen-rearing, and almost all the new ideas of any importance have been tried in my apiary, but I have now decided to devote my attention to honey production in view of the £ s. d. part of the business. Without having had any exceptionally large 'takes' of honey, the bees have generally given a fair average yield. The most I ever took from a single colony in one year was eighty-four 1-lb. sections.

MR. J. WATERFIELD, JUNR.'S, APIARY, KIBWORTH, NEAR LEICESTER.

"I have been a successful exhibitor at the 'Royal' and county shows for several years past, having won the silver and bronze medals and certificate of merit of the B.B.K.A., as well as other medals. I also hold an expert's certificate under the B.B.K.A. As regards association work I have gone through the whole routine of membership, committee man, district secretary, and for five years past have held the office of Hon. Secretary to the Leicestershire B.K.A. Being engaged in agricultural pursuits, I am sorry to say I cannot always give as much attention to my bees as I should like to, as

the busy season of hay harvest and honey harvest, unfortunately, come together. For this reason my better half is, indeed, worthy of a place in the photo of my bee garden, for she truly is a model bee-man's wife and takes quite her share in the work of the apiary, and sometimes a little more, which is no light task. It is no trouble to her to hive swarms, put supers on, or feed the bees up for winter if required; and then, when the honey gets indoors, she does most of the (jarring off) labelling, and finally, after disposing of the product, she ends by becoming a very careful custodian of the 'cash bag.'"

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

REMOVING BEES FROM ROOFS.

[3801.] Having had a good deal of experience in removing bees from various kinds of buildings and trees, I shall be glad to assist your correspondent "W. J. B." (3773, p. 384), who writes in B.B.J. of September 28. To read of your correspondent having taken the poor bees' store of honey and left them to starve, gives one a feeling akin to a painfully empty stomach. It is a genteel form of cruelty. Your correspondent would not, I am sure, treat any colony of his own bees so thoughtlessly—his enthusiasm warrants my presuming this much.

When removing bees and honey from trees and buildings, I make it a rule to secure the bees first. If the bees have made their home in a building, the tiles or other coverings are first removed from above and a little beyond distance to which the combs extend. This prevents the bees escaping by back ways. I usually take with me some long strips of old tough brood-comb. One or two of these strips are gently pressed down to the bees, and skewered to the inside of an empty skep, placed—and, if necessary, fastened with nails—above the cluster of bees. A powerful smoker is an important and indispensable assistant in such jobs, and with a good smoker, filled with a good supply of corduroy or other reliable fuel, the bees may soon be driven up from below into the skep. If the bees are in a tree it is necessary to find out just where the combs are; this done, two holes, one above and one below the bees, are necessary. If there are not two holes already in the tree, a second hole can be made with an augur. The skep fitted with the strips of old comb is fixed at the upper hole, as when driving bees from a building, using the smoker at the bottom hole. There are various things that a second pair of hands can do in these jobs, but I have never been able to secure any help worthy of the name. The "helps" are so apt to turn out hindrances, throwing down appliances and making for a hiding-place as soon as the "business" commences. I have received two requests this autumn to remove bees from the roof of one house and the plaster front of another, and if my health allows me to do the work I should be glad of "W. J. B.'s" assistance if it were available. If bees taken from buildings have been semi-wild for some years, I find it necessary to re-queen them, as they don't take kindly to a hive.—WM. LOVEDAY, *Hatfield Heath, Harlow, Essex, October* 23.

THE DAIRY SHOW.

[3802.] I think special recognition in the BRITISH BEE JOURNAL should be accorded to those bee-keepers, all over England, Wales, and Scotland, who contributed the very fine collection of honey and allied products last week at the Dairy Show. The bee-keeping industry is indebted to them for their public spirit, since the temptation of prize-money will not account for the bringing together of so choice a collection, which did credit to the craft. I wish more prizes could have been awarded, for the exhibits were nearly all of prime quality. There ought also to be more prizes for honey next year. I hope the exhibits will be staged in a better light and none against a dead wall; a good light brings out the transparency and colour of honey.—E. D. T., *Eynsford, October* 23.

PRICE OF HONEY.

[3803.] Referring to the recent controversy in the B.J. regarding the current prices of honey, I send a line with result of my recent observations as to price for sections in several shops in Belfast. I saw 1-lb. sections marked varying in quality and price from 10d. down to 6d. per section (the latter was marked "Mountain Honey"). Some marked "7d. each" were wrapped in fine coloured paper. Curiously enough, while the above very moderate figures were shop prices for the 1-lb. sections, a hawker was asking 1s. per lb. for honey cut from slabs of comb (carried in a dish on his head) no doubt from skep supers.

I happened to be in Newcastle-on-Tyne a few days ago, and in a shop there saw 1-lb. sections of heather honey marked 1s. 4d. each. While in another shop heather honey in comb from a dish was marked 2s. per lb. This variation in price is interesting if not very useful.—J. H., *co. Down, October* 20.

SELLING HONEY.

[3804.] After the suggestion by your correspondent, "W. W., Hull," in your issue of B.B.J. of September 28, that large producers should give the prices they obtain for their honey, I thought, perhaps, a good deal of correspondence would have taken place on the subject. However, as the large producers—with one exception—have not responded, perhaps we smaller fry can give our prices with advantage to our fellow bee-keepers. I have sent one firm about ¼-ton of honey at 9s. per dozen sections, well filled and cleaned, but without any glazing, and 1-lb. metal screw-capped glass bottles at the same rate. I have disposed of a good quantity locally at 8d. per lb., buyers finding bottles, and for selling this I have paid 1d. per lb commission. In this neighbourhood our sole dependence for the honey harvest is on the white clover blossoms, and through the drought it has been almost a failure this year. Passing by an old elm tree to-day, thickly covered with ivy, I noticed hundreds of bees revelling in the flowers, and filling the air with their noisy hum. A most conspicuous feature this month has been the pollen, which has been carried in to an almost alarming extent. —*T. Herbert Powell, Norfolk.*

BEES IN SUSSEX.

A SHORT ACCOUNT OF SIR HENRY HARBEN'S BEES AND THEIR DOINGS IN 1899.

[3805.] In 1897, when the bee fever began to spread in this district, the bees at Warnham Lodge (Sir H. Harben's residence), were, on examination, found to be badly affected with foul brood. We tried to cure them, but did not meet with perfect success, so to be quite safe, it was thought best to destroy every colony and make a fresh start. This was done in 1898 by purchasing four swarms, from which a few dozen sections were taken, and in the autumn of that year we got sufficient driven bees to make up two good stocks. We therefore started the season of 1899 with six stocks, for which the visiting expert of the County Association gave us a clean bill of health; three lots were worked for extracted honey and three for sections. Neither of the hives worked for extracted honey attempted to swarm, but of the other three two swarmed, one of which returned to the parent hive minus their queen. The other swarm was hived all right, but on examining the parent stock a month later no queen was to be found, and very few workers, while to make its uselessness complete, the wasps had cleaned all honey out of the hive.

As to results, we got of extracted honey 88 lb., 60 lb., and 60 lb. respectively from the three hives; of sections the yield was 90 lb., 24 lb., and 20 lb., the last two being from the hives which sent out swarms. I may add the 90 lb. was from a stock of driven bees. It will thus be seen that the total amount of honey taken was 342 lb., an average of 57 lb. for the six hives. What has been sold fetched 9s. per dozen for extracted and 8s. per dozen for sections, making the value of the whole £12 4s. 6d. The expenses amounted to £3 10s. 9d., thus leaving a profit balance of £8 13s. 9d.—F. KNIGHT, *The Gardens, Warnham Lodge, October* 23.

METEOROLOGICAL

OBSERVATIONS TAKEN AT KETTON, STAMFORD, RUTLAND, FOR THE WEEK ENDING OCTOBER 21, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.	Wind.
Oct. 15..	30·16	44·9	53	39	14	45·8	—	NE
,, 16..	29·92	44·1	58	36	22	46·7	—	NE
,, 17..	30·02	48·3	63	40	23	51·2	—	SE
,, 18..	30·26	37·9	62	34	28	47·6	—	SE
,, 19..	30·36	36·3	53	30	23	41·2	·01†	SE
,, 20..	30·34	35·0	52	29	23	40·2	·01†	SE
,, 21..	30·34	43·4	52	32	20	41·7	.01†	NW
Means ..	30·20	41·4	56·1	34·3	21 9	44·9	·03*†	—

* Total, ·03 in. † Fog.

Mean vapour tension, 0·231 in.; mean relative humidity, 88 per cent.; mean temp. of the dew point, 38°·0. The water yielded by the fog = 678·69 gallons, or 3·03 tons to the acre, or 2·4 oz. to the square foot. For the week ending October 14, the mean temp., viz., 47°·0 (not 46·9 as sent in error), was – 2°·8, and the rainfall, viz, ·26 in., was – ·44 in. The mean temp., October 1 to October 14, viz., 47°·0, is – 3°·8, and the rainfall, viz., 1·25 in., is – ·17 in.

FRED. COVENTRY.

The Vale, Ketton, Stamford, October 22.

NATURALISATION OF BEES

ON AN ISLAND IN THE GULF OF ST. LAWRENCE.

An experiment in naturalisation is, according to the *Echo*, being tried on the bleak island of Anticosti, in the gulf of the St. Lawrence, that ought to be watched with great interest. Mr. Menier's agent there has been in consultation with the officers of the Geological Survey at Ottawa as to the possibility of establishing bees on the island, and as a result of this the Canadian Government has decided to supply a sufficient number to start one or more apiaries. Mr. Percy Selwyn, the secretary to the survey, is himself a good apiculturist, and so takes a great interest in the matter. He doubts, however, if the experiment will prove successful, as there is no pasture-land on the island, but only dense woodland. He advises that a few acres should be cleared and seeded with white clover, which is indigenous to the neighbouring mainland of Canada. With this there might be a chance of success. It is not stated, however, whether this advice will be followed.

IRISH BEE-KEEPERS' ASSOCIATION.

The Committee met on 19th inst. Present: Mr. Delap in the chair, Rev. J. G. Digges, Dr. Traill, Mr. Read, Mr. Watson, and Mr. Chenevix (hon. sec., 15, Morehampton-road, Dublin). It was reported that the Association had ceased to give lectures at Glasnevin for want of funds, and it was resolved to make fresh efforts to obtain a grant, by means of which they could be undertaken again.

SEASONABLE QUESTIONS.

BEE-LIFE—HOW LONG IS IT ORDINARILY?

Question.—One of my neighbours claims that the worker bee lives to be a year old, and sometimes lives to see eighteen months. Another claims that no bee in the hive ever attains to such an age, six months being the usual length of the worker bee's life, while the queen may live a year. In a paper I was reading lately, I see that thirty days is the life of a worker bee in the summer season. What are beginners to think when there is such a variety of opinions? Please tell us in *Gleanings* just how long the queen, drones, and workers live, under ordinary conditions, and thus confer a favour on the many beginners who read that excellent paper.

Answer.—Surely no one need be ignorant in regard to the length of life of the worker bee when one experiment would tell him the truth in the matter, and convince him that the average life of the worker bee is about forty-five days during the summer season, or a half more than the time quoted from the paper, and sixteen and a half months less than that given by the first neighbour. Take a colony of black or German bees, for instance, and about the 10th of June take their queen away and introduce an Italian queen, keeping record of the date on which the change was made. In twenty-one days the last black bee will have emerged from its cell; and if the Italian queen went to laying immediately, the first yellow bee will have made its appearance, the time of the appearance of the first Italian bee being jotted down also.

At the end of forty-five days from the time the last black bee had hatched, no black bees will be found in that colony. At forty days plenty of black bees can be seen, they becoming fewer and fewer each day, so that on the forty-fourth day there will be very few indeed left. This is for the summer months, and does not apply at all to those of the winter. The life of the bee depends upon the work it does. Thus when it labours the most its life is the shortest. Hence it comes about that, through the inactivity induced by cold weather, the bee can live from seven to eight months. This is proved by changing the queen as before, only it is done this time about the middle of September. Soon after October 1 the last black bee will have emerged from its cell; but I have often found a few black bees on June 20 of the following year, in a colony so treated. Also when spring opens, or about April 1, there will be very few yellow bees in this hive, which shows that but little brood is reared from October until April, as well as telling us that more bees die in two months in the spring than during six months of winter; hence all possible precautions should be taken to preserve the life of those old bees during the spring, so that they do not die off too suddenly, or have what is known as spring dwindling before the brood has emerged from the cells in sufficient numbers to keep the colony in a prosperous condition.

The life of the drone is regulated very largely by the workers, for drones are usually killed or driven off by the workers long before they would die a natural death from old age. Any sudden cessation in the flow of honey from the fields is often considered sufficient reason for their being driven off, or out of the hive to die, or the killing of them by stinging if they are persistent in staying in the hive, so it is hard to tell just what age they might attain to were they allowed to live to the good old age allotted to them when not persecuted by the workers. Most apiarists think that the drones would live to about the same length of life attained by the workers; but from a close observation with those which I have tried to preserve in queenless colonies for the late fertilisation of queens during the fall months, I am of the opinion that they are of a little shorter life. It is a rare thing that I have found any out of a certain "batch" to be alive after forty days from the time the last one emerged from the cell. Unless some precautions are taken, it is a rare thing that any drones are allowed to stay in the hive after the honey harvest is over in the fall; still, we have a few reports where drones have been wintered over, and I have had them flying in mid-winter when the bees are out for a cleansing flight.

The average life of the queen is about three years, although some have been known to live more than five years. A man at the convention of the United States Bee-keepers' Association, recently held at Philadelphia, told me that a queen he purchased of me lived to be five years and five months old; and I had one, purchased of Mr. A. I. Root some twenty years ago, live to be five years and four months old, she doing good work up to the last month she lived. Queens live also in proportion to the work they do, or according to the number of eggs which they lay, as egg-laying is the only work queens perform. Under our present system of management, most bee-keepers coax the queen to lay as many eggs in one year as she usually would were she in an old tree or box hive in two years; hence most apiarists think that all queens should be replaced after the second year with those which have just commenced to lay. There is no question but that a queen reared during July, August, or September of

any year will do as good work the following summer as she ever will; but it is a question whether it will be a paying undertaking to remove the queens in the apairy at the end of their second summer's work, and then replace them with young queens. I have experimented along this line to a considerable extent, and the result is that I do not now make it a practice to supersede my queens every two years, for I find that the bees are quick to understand when their mother is failing, and will supersede their own queen when she gets to be too old to be of service to them; so I trust the matter to the bees, believing that they know what is best for them in this respect better than I do.—G. M. DOOLITTLE, in *Gleanings* (American).

HOW BEES GET DRUNK!

AN OUTSIDER'S VIEW OF THE BUSY BEE.

The bee's alleged perfection of policy and government has been the theme for laudation for centuries, but truth compels us to say that she is not the paragon of industry she is universally supposed to be, and many are the tumbles from the lofty moral perch on which we have placed her. We use the female gender advisedly. The drone is the male of the bee tribe. The favourite relaxation of the bee is to abandon her moral attitude altogether and go off on the spree. Bees have been seen so drunk that they could not fly, and in a condition of mental and physical paralysis, due to their copious imbibing. It is a very common thing on a big bee-farm to find the transgressing honey-makers staggering about on the tops of flowers or writhing about in the dust of roads, and performing all the absurd antics of a man who has been sampling. If the finger of scorn is laid upon the intoxicated bee, no resentment, as conveyed by stings, will be manifested, the backslider contenting herself with striking out weakly with legs and wings.

Picked up and permitted to crawl upon the naked palm of a human hand, she will reel about in sinuous curves, buzzing drowsily and flourishing her impotent legs in an idiotic fashion most painful for the enthusiastic exploiter of her virtues and rectitude to behold. Or, again, when found in the early stages of drunkenness, the bee will get upon her hind legs, actually perform a sort of eccentric dance, beating time to her irregular measures with her other legs. Recovering somewhat from her debauch, and conscience-flayed, the little drunkard will strike out for home, and then it is really a pathetic, if rather ludicrous, sight her efforts present.

[The above press cutting was kindly sent by a reader who thought it of sufficient interest to be worth inserting in the B.J. The only interest, however, that we can see in its appearance in our pages lies in our being enabled to express some wonderment at press writers, evidently entirely ignorant of what they are writing about, allowing themselves to become a laughing-stock for all who know anything about practical bee-keeping. For the rest, the statements made are simply nonsense.—EDS.]

Queries and Replies.

[2294.] *Preventing Loss of Swarms—Races of Bees, and Methods of Management.*—Will you kindly answer the following questions in B.B.J.? A short time ago, when looking through some back numbers of B.B.J., I saw an account of an American bee-keeper who stated that if a queen's wings were clipped she would, when issuing with a swarm, fall to the ground, and eventually climb up a stake previously thrust in the earth in front of hive. The account also went on to say that the bees would nearly always find the queen, and cluster on the stake with her. Now, as my queens already have their wings clipped, the first condition is fulfilled, and as my apiary is three minutes' walk from home, in a neighbour's garden, and there is no one in charge during daytime, I would ask:—1. Do you think the above plan would be a success? 2. Which do you consider the best races of bees (placed in order of merit), black (native), Carniolans, Ligurians, Cyprians? 3. What race of bees do those I enclose belong to? 4. When is the best time to re-queen from my own stocks so as not to interfere with honey gathering? 5. Has the "Wells" system been proved a success? If not, what are its failures?—TEN YEARS A BEE-KEEPER, *Newton-le-Willows, October* 19.

REPLY.—1. We see no reason to question the veracity of the writer of the statement referred to, though it would seem as if several climbing "stakes" would need fixing up to ensure the queens taking advantage of one. Our own experience of "clipped queens" is very limited, but we always looked for the swarm and queen on the nearest thing handy that stood above ground, and generally found her with a handful or so of bees on the ground itself. 2. This is largely a matter of preference. Our own choice is for a good strain of the black or native bee, while our senior editor (Mr. Cowan) has been very successful with well-bred Ligurian queens of good strain. But many bee-keepers of repute prefer a first-cross hybrid. You had better give the foreign element a trial on a small scale, and judge by results. 3. Probably a third cross of Carniolans and blacks. 4. If queens are reared in nuclei beforehand, our favourite time for re-queening is just after the honey flow for the current year has ended. 5. Beyond referring you to the reports *pro* and *con* which have appeared regarding the "Wells" system in

past issues of B.J., we can only say the system is suitable only for those who are well up in bee-management.

[2295.] *Feeding-up for Winter.*—1. As my bees are taking candy very freely just now should I continue to give it to them as long as they will continue to take it? 2. One of my colonies had plenty of sealed honey in the hive at the end of August, and yet the bees are now taking candy as freely as another stock that I think were short of stores. Does this show that the first-named stock needs food?—J. H., *Holywood, October* 19.

Reply.—1. There is no need for continuing candy-feeding longer than to make sure that the bees have sufficient stores to winter on. 2. The fact of bees taking food freely is no criterion of the quantity of stores in the hive. Only an examination of the combs can decide this point.

Bee Show to Come.

November 16. At the Town Hall, Ludlow. Honey Show in connection with the Chrysanthemum and Fruit Society's Exhibition. Two open classes for honey (Sixes). Schedules, &c., from John Palmer, 17, Brand-lane, Ludlow. **Entries close November 7.**

Notices to Correspondents & Inquirers.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Erin (Co. Fermanagh).—*Unsealed Honey in Sections.*—1. By all means extract the honey from any partly-filled sections. If left as they are till next year, the honey in them will have granulated, and they will be unfit for use so far as regards getting them completed. 2. We are glad your season has been a good one, nor can we wonder at it, judging by the sprig of heather-bloom (so beautifully fresh in flower and foliage) pulled on the Donegal mountains so lately as October 19.

C. R. Wymor (Greenwich).—*Size of Section Racks.*—1. The rack holding twenty-one sections of the orthodox 1-lb. size, and providing for a "follower" (*i.e.*, the board with spring attached to keep the sections pressed close up), is of the proper size to cover a ten-frame hive. A rack holding thirty-two sections would be too large. 2. There is no regular "order" that can be named "for bees gathering honey from the various plants and trees with regard to market value." All depends on the *flora* of a district beyond the fact that early honey is almost wholly from fruit bloom; the main or summer crop comes from clover, sainfoin, and the various honey-yielding field-crops. In July we have the limes in full bloom, and latest of all the heather. This is the only "order" of honey gathering that can be given. The light-coloured honey comes mainly from white clover. 3. The chestnut yields honey of poor quality.

J. W. B. (Pembrokeshire).—*Storing Honey.*—See editorial notice under correspondence. Name of communicants should be sent as therein stated. Extracted honey will, if ripe, keep well for years if stored in a warm, dry place.

Section (Worcester).—*Propolis and Wax.*—Some stocks of bees have a predilection for gathering propolis, and where a neighbourhood abounds in resinous trees and shrubs it affords such colonies ample opportunity to carry out their desire to the fullest extent. All that can be done is to see that supers, frames, and quilts, &c., fit properly, leaving no available space needing propolisation. The sample of wax sent is a very poor one, consisting largely of pollen and sediment, with just sufficient wax to hold same together. Its commercial value is very small. Unless bees were at the time of mishap suffocated by the entrance being closed we should anticipate no future harm.

S. Good (Petsall).—*Soluble Phenyl.*—This antiseptic is supposed to be obtainable from all chemists; but, not being one of the remedies "boomed" by loud advertising, is less easily purchased. It may, however, always be had from the makers, Morris, Little, & Co., Doncaster.

La Ruche (Andover). — *Full Sheets or "Starters" in Sections.*—It is generally admitted that the use of full sheets of foundation in sections is a saving to the bee-keeper, the advantage gained more than covering the cost.

W. Lightfoot (Walsall).—*Bees Cast Out of Hive.*—The only indication of the cause of death observable is the dark, shiny appearance of the abdomen in bees sent. This would have led us to suppose there had been some "robbing" going on; but as no mention of "robbing" is made in your note, we are at a loss to account for the mortality without a personal examination. It is, of course, possible that the queen is failing, and thus unable to keep up the population of the hive. If you will say how many combs the bees cover we may be able to say whether or not the last suggestion is probably correct.

Editorial, Notices, &c.

BRITISH BEE-KEEPERS' ASSOCIATION.

CONVERSAZIONE.

(*Continued from page* 422.)

Mr. F. B. White said that at the local shows with which he was acquainted competitors might make any number of entries, but could not take more than one prize per class. This fact did not seem to deter bee-keepers from making several entries in one class.

The Chairman and Sir Stanley Edwardes thought the present rule damaging to the industry, that it tended to frighten would-be exhibitors and confine the show to the hands of a very few. Sir Stanley also asked whether the B.B.K.A. could not have the honey exhibits subject to their own rules?

Mr. Young replied that the British Dairy Farmers' Association had up to the present fallen in with every suggestion that had been made to it.

Messrs. Hooker, Reid, Hayes, Gordon, Wood, Meadows, and Burkitt were in favour of allowing a competitor to make any number of entries in each class, but only to receive one prize, Mr. Gordon pointing out that it was no compliment to an exhibitor to obtain a second prize when he had already secured a first. It appeared that this arrangement was the practice at most provincial shows.

At this juncture a short adjournment was made for tea, after which Mr. Till retired, and Mr. F. B. White presided.

Mr. Reid referred to the late-flowering lime tree (on which subject he has already communicated his views fully to our pages, *vide* B.J. of September 28 and October 12), and said that, although the scientific name was *Tilia petiolaris*, it appeared that this name had several synonyms, which made it at first difficult to fix correctly upon the one to which attention had been drawn. He (Mr. Reid), had brought with him samples of the foliage, while Mr. Lyon, of Hastings,* and Mr. Scattergood had also obligingly furnished additional specimens. At the same time, he produced a few twigs of the ordinary lime for comparison, from which it would be seen that the leaves of the special variety were lighter than those of the ordinary kind, and that their veins were much more prominent. There was also an important difference in the appearance of the seeds of each kind. Those of the ordinary lime were quite round, while in the late-flowering one they were not, but bore five little protuberances. It would also be noticed that in the late variety the seeds were not nearly ripe, while in the other they were falling.

Miss Gayton had noticed in her own locality at Much Hadham great numbers of the trees in question, which began to bloom after the common lime ceased. She welcomed any attempt to increase the length of the honey harvest, and hoped Mr. Reid's experience would be made widely known.

Mr. Perry identified Mr. Reid's "find" as the "silver lime," which always bloomed about three weeks later than the ordinary kind. It was a very drooping tree.

Mr. Andrews had in his garden a row of limes which he planted twenty-five or thirty years ago. One of them was a drooping and late-flowering lime, but while the flowers of this one were larger, the leaves were smaller than those of the common lime.

Mr. Scattergood took great interest in this subject, and when letters appeared in the B.J. thereon he communicated with Mr. Barron, of Borrowash, Derby, who described the tree as *Tilia petiolaris*, and offered to supply saplings from 8 ft. to 10 ft. high for 3s. 6d., and from 5 ft. to 6 ft. at 1s. 6d. He hoped they would be able to correctly call this tree the "silver lime," which would make it easy of identification. Then, if it were well advertised in the B.J., their industry would reap the benefit, although he feared that the aphorism "he who plants pears plants for his heirs" applied to these trees.

Mr. Bevan produced some branches of the late-flowering lime cut from a tree 35 ft. high, which swept the ground. There were both the white and the red twig variety. He knew them in the Jardin des Plantes at Paris thirty years ago; the white was known as the *Tilia alba pendula*. He thought, however, that bee-keepers should be chary of planting this tree, for in damp seasons the bees seemed to become stupefied under its influence and might be found on the ground underneath the tree. True, there was not a single bee down this summer or last, but both seasons had been exceptionally dry. The scent from these limes was distinguishable a long way off. At any rate, it was a handsome tree. It would be desirable, however, to find out what were the particular properties of it which affected the bees in wet seasons.

Mr. Jonas had seen a similar tree at Tunbridge Wells, and sent a specimen twig to Dr. Thisleton Dyer, who described it as the *T. alba pendula Americana*. The scent from it was very powerful.

In answer to Mr. Brice, who suggested that it would be desirable to test the difference of quality between ordinary and late-flowering lime honey, Mr. Bevan said he had some beautiful clear transparent honey, which he believed to be the product of the late-flowering lime; but it might have an admixture of the ordinary species as well as some clover. It was very strong smelling.

Mr. Reid thought that nearly all the trees described were similar to the one he had brought to notice, and it would be an advan- to bee-keepers to plant them. Major Fair stated that the Kew authorities recognised the

* Mr. Lyon's specimen was the one illustrated on page 403 of B.J. for October 12.

tree as *Tilia petiolaris*, and that it came from the Crimea. It was a definite variety, and probably propagated by seed.

Mr. Reid next exhibited and passed round for inspection a feeder of his own invention. The difficulty he had found in winter, when the bees had no stores, was that they would not generally come up to a feeder placed above them, and if they did they would most likely be chilled. His plan was, therefore, to feed them by means of a tube in centre of the cluster. The principle of the contrivance was this. There was an outer tube like a test-tube, closed at the bottom, and it was only necessary to make a little hole in the quilt and insert it. This feeder could also be used in a skep. Mr. Perry had also invented a feeder which would act equally well for autumn or spring feeding. It went down between the frames as Mr. Reid's did, and the supply of syrup could be made fast or slow as desired.

Mr. Hooker said the best method of feeding was to leave honey in the hive (laughter).

Mr. Brice had been deputed by Mr. Carr (who while absent from town had not forgotten that meeting) to show two German bar-frames, one large and one small, sent over by Mr. Hamlyn Harris, who had mentioned these frames on page 411 of the Bee Journal for October 19. The principal characteristic of them was that there was no bee-space at the bottom. It was well known that the German bee-keepers had been pioneers in the cause, especially with regard to the scientific part of it, but the specimens he exhibited would not excite admiration of their methods. These frames were not worked from the top, but drawn out from the back.

Messrs. Taylor, Perry, and Buller had had experience of the German hives in question, and all agreed that there was an ordinary bee-space underneath the frames; but they were not at all favourably impressed with the system.

Mr. Howard gave an interesting account of a visit he paid to Germany last year, on the invitation of a German bee-keeper, for the purpose of studying German methods. He found, just as in England, some bee-keepers very untidy and others the reverse. The former naturally had the most trouble with their hives. It was surprising how much work the expert German bee-keeper could get through in his plodding style; but in spite of that, he (Mr. Howard) prided himself that his English *confrères* were miles ahead of him, although no doubt the Germans were thoroughly scientific. He (Mr. Howard) was asked to one of their Conferences, held on a Sunday evening, when about 250 bee-keepers attended. He was astonished at the order and earnestness displayed, though he must confess he sat for about three hours in complete ignorance of the subjects dealt with. Nevertheless, he could judge when this or that debater was "hard hit." He discussed Mr. Dickel's new theory concerning the transformation of workers into drones with one or two professors, through the medium of his friend, who interpreted; but the result was not very satisfactory, and he came away with many doubts not cleared up.

Mr. Howard also observed that shows were apparently inaugurated in Germany for the purpose of securing a more ready market for their produce, prize honey always obtaining a ready purchaser. The Germans acknowledged this, and, probably with a view of stimulating the industry, gave a prize or commendation to every exhibitor.

Mr. Bevan said that many of their Continental friends did not offer any money prizes at all! He had been a judge abroad, and his experience was that gold, silver, and bronze medals, and awards in kind, were the usual practice.

Mr. Wells produced samples of section and extracted honey, gathered mainly from the *Mellilotus*. The specimens were passed round and generally commended. As a good deal had been said about the value of limes, he thought it advisable to urge the claims of the Mellilotus plant, which bee-keepers would have no difficulty in growing in abundance. He had distributed large quantities of seed to whoever wanted them. The plant commenced to flower about the middle of July, and lasted till killed by frost, and was in flower now on chalk banks. The seed might be cast about any ground in any shape or form, and it would usually take root.

Mr. Brice called attention to Mr. Sladen's case of specimens of the "enemies of the honey-bee," exhibited at the Dairy Show, and to the various stages in the development of the wax-moth (*Galleria cerena*) shown in it. He then handed round for inspection a box containing a large number of the cocoons of the wax-moth in a late stage.

Mr. Sladen said that the earliest stage of the working of the wax moth larva was not shown in his exhibit at the Dairy Show. An exhibitor of honey at that show had drawn his attention to some sections which had some curious streaks under the surface of the comb; resembling cracks in the capping, but which on closer examination proved to be the burrows of some minute boring animal. Here and there the burrows terminated in a hole through the capping, around which was thrown up an excrescence, consisting apparently of minute particles of wax. This might be the working of the wax-moth larva in its earliest stage, but as the tunnels were very minute, and did not appear to increase in size, he was doubtful about it. The pest, whatever it was, seemed to be very damaging to the appearance of comb-honey, and should be investigated. The exhibitor mentioned had promised to send him some badly-damaged sections upon which he hoped later to make a report.

Mr. Winterton and others said they had observed in their hives some much larger wax-moths than those shown in Mr. Sladen's

exhibit, which they thought belonged to a separate species. Mr. Sladen remarked that *Galleria cereana* varied very much in size.

Mr. Sladen then showed some live hornets on behalf of Mr. Brown. Mr. Brown, he said, considered that hornets were not so inclined to rob beehives as the common wasps. What they most liked was over-ripe fruit. The specimens shown were captured by Mr. Brown's son with his cap and fingers.

The Chairman invited an expression of opinion on a subject mentioned early in the evening by Mr. Till, namely, the desirability, or otherwise, of separating the extracted honey classes at the show into light, medium, and dark honey; and as to what means should be adopted to inform exhibitors of the distinctions.

Mr. Howard condemned the present rules with regard to lace-paper edging, and also quite agreed that there should be three classes for extracted honey. He suggested that strips of paper should be attached to the schedules showing the limit to which light and dark honey's would be accepted, the various shades between the two forming the intermediate class.

Mr. Taylor thought small bottles of each standard colour might be sent round to the county associations, so that intending exhibitors could see for themselves in which class their samples would be placed.

The Chairman pointed out that exhibitors would then have to make a special journey, maybe from some remote part of the county, to see the bottles.

Mr. Hayes said that in his county they had classes for light and for dark honey, the dividing line between the two being indicated by a strip of paper pasted to the schedules.

Mr. Young said that plan was feasible in the case of small shows, perhaps, but with regard to sending out about 20,000 schedules by the "Royal" or the "Dairy Show," the printing and publishing of the coloured illustrations would be expensive. Could there not be a coloured plate prepared by the Central Association, and sent out in some particular issue of the BEE JOURNAL, which would answer the purpose?

Mr. Winterton recommended that the standards should be made of coloured glass, which would never fade.

Mr. Brice said that the B.J. was taken by many who never proposed to exhibit, but he thought they should invite all intending exhibitors to send a penny stamp for the coloured paper standards.

Mr. Sladen suggested that the Steward of the Show might be given power to class the honeys according to his own view of colour.

Mr. Young feared that exhibitors would not send for the colours in accordance with Mr. Brice's view.

Mr. Hooker and others thought that strips of paper of the right colours might be sent to the Secretaries of Associations, who could cut them up into little pieces, and send one of each to their members.

Mr. Pugh deprecated the tendency of judges to give too much importance to the colour of honey's. Even in dark honey classes, it was generally the lightest of the exhibits which secured the prize.

Mr. Meadows objected to Mr. Young's proposal because of those bee-keepers who did not read the B.J.; but it might be arranged that specimen colours should be obtained from the B.B.K.A. on receipt of a stamped envelope. As to the classifying being left to the stager, that was out of the question. He had plenty to do, without such extra work and responsibility. As regarded paper edging, he thought it useless, and that it ought to be abolished. The duty of the Association should be to encourage the industry, not hamper it with restrictions, which often deterred intending exhibitors.

Mr. Buller advocated the publishing of the names of the judges, which would be an assistance to exhibitors, who would then have a good idea as to what kind of honey would be likely to secure prizes. As to leaving the distribution of colours in the hands of local secretaries, what would be done in those cases where no County Associations existed?

At the instance of the Chairman, Mr. Hooker proposed, and Mr. Jonas seconded—"That this meeting is of opinion that there ought to be three different classes for extracted honey at the Dairy Show, and that the B.B.K.A. should be authorised to take measures for carrying out the same and finding the best means of indicating to exhibitors the colours of each class."

The resolution was carried unanimously.

Mr. Jonas proposed, and Mr. Brice seconded, a vote of thanks to the Chairman, which was briefly acknowledged, and the proceedings were brought to a close.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

THE DAIRY SHOW.

[3806.] The Dairy Show, the last great honey show of the year, is over and past; old friends have gathered together and renewed the friendships of the days of yore. There we met the veterans of the craft and a small army of latter-day bee-keepers, who we hope will carry on the work and sustain the reputation of our industry when the elders have retired to their easy chairs to smoke the calu-

met of peace and contemplate on the past of bees and bee-keeping.

The show of honey at the Agricultural Hall was, in my opinion, equal to any of its predecessors ; but the subject will probably be dealt with by our editors later on in these pages. I therefore pass on to matters more intimately connected with the exhibits at the Show. First, I would like to say a word or two *re* "entries." This question was animadverted on at Jermyn-street by General Sir Stanley Edwardes. In reply—and as the culprit who had the distinction of receiving three prizes in one class—let me say I have looked through the full catalogue of the Dairy Show, and find that in every class the bulk of the entries are composed of triplets. Lady Cavendish Bentinck leads off in Class I. with three entries, followed by Lord Rothschild with the same number, and we must suppose that the only reason all these trios did not take the prizes was because the several exhibits were not of sufficient merit. I can quite understand the argument of General Edwardes when applied to a small local show, where every donor to the fund wishes to encourage his gardener or other servant who is an exhibitor, and where the prizes are so distributed that each may receive encouragement for exhibiting the produce of his garden or apiary ; but when dealing with a national show, open to every bee-keeper in the kingdom, with judges who are practical men, above suspicion of partiality towards any exhibitor or exhibit, the case is different. Besides, when the rules and regulations are expressly arranged so that exhibitors may win the three awards if their exhibits are of sufficient merit, need I say more ?

I was glad to see the question of lace edging for sections discussed at the Conversazione. I have purposely delayed referring to this matter till the dull season, but now hope that we shall have the matter thoroughly thrashed out before the Council of the B.B.K.A. consider their next year's prize list.

I trust that the member (who must be a mathematician), whoever hopes to get in the vexatious measurement of $3\frac{1}{2}$ in. of comb surface on the face of the section free of edging, will just sit down and glaze a dozen sections and see if the feat is an easy one ! As an exhibit of mine was disqualified for encroaching on the $3\frac{1}{2}$-in. space by just $\frac{1}{16}$ in., I know whereof I am writing, and as every section was measured before dispatching to the show in question, in order to see that the $\frac{3}{8}$ in. on glass was not exceeded, I had to write the secretary for an explanation, when the $3\frac{1}{2}$ in. was made a prominent point. Being advised to cut a square of cardboard of the proper size, I improved on that suggestion and cut a square of glass exactly $3\frac{1}{2}$ in. This I laid on, and found the points of the edging in some cases exceeded the limit by $\frac{1}{32}$ in. and in one or two by $\frac{1}{16}$ in., and for this my sections were disqualified, though the sections which took first prize (I am now speaking of 1898 sections) exceeded the limit in the same proportion as the disqualified exhibit. Now, my contention is, that without exhibits there can be no show ; that these vexatious disqualifications, where there is no endeavour to hide up imperfections, are not likely to tempt exhibitors to again enter the lists.

As far as my own exhibiting is concerned, I may say it is done on educational lines and for advertising purposes more than for prize-winning, though so long as I exhibit I shall stage some of my best. The quality and other points of a really good exhibit are not hidden or enhanced by a shade more or less in the width of paper edging, and the judge who is worthy of his badge ought to be able to decide which are the best ; it ought, in all fairness, to be a judgment on the comb-honey and not on the "edging."

I have completed my new section-glazing machine, and hope to turn every section out of hand of exactly one width all round. Till then my good wife will, I trust, be able to continue her almost perfection of good glazing by hand.—W. Woodley, *Beedon, Newbury.*

LACE EDGING OF SECTIONS.

[3807.] Surely this question is a simple one ! It was thoroughly considered by the B.B.A. Council some years ago, and decided simply on the grounds of common sense. It was discovered that lace edging improved the appearance of a section, both to the eye of the general public and also of the judge. The edging hides the least comely part of the section, and the wider it is the more thoroughly does it conceal its defects. Exhibitors kept on increasing the width of the edging, and undoubtedly gained an advantage over those who were content with less. Complaints came to the committee, and they judged that, in order to be fair to all, and also to prevent an extravagant increase in the width of the edging, that its limits must be defined. This was done, and I think it was a poor compliment to the exhibitor of the beautiful sections which were disqualified by accidental neglect of the rule, to suggest that he was not a good enough workman to have set his edging to the required width.—Henry Bligh, *Fareham Vicarage, Hants, October* 26.

"A PAYING SWARM."

OVER 200 LB. FROM A JUNE SWARM.

[3808.] I should be glad if, in response to numerous invitations as to how I did it, I could do something to elucidate the matter and aid others in repeating the "take" referred to by me on page 395. I think, however, that "method" had little to do with my success, but that it must go down to the credit of those excellent English bees, which luck, or Mr. Woodley, was kind enough to send me. On arrival they did not look at all a lively

lot for, having taken a rather long time *en route* (Monday till Thursday), the bees were very dull and sleepy, so much so that I had to sprinkle them with very thin warm syrup to waken them up. They weighed 3 lb. 12 oz. net, and were hived on eight frames, some of these having only "starters," some quarter-sheets, and only two had half-sheets of foundation. I put on a feeder—as I invariably do with swarms from a distance—and gave them 2 lb. of syrup, another pound being given every evening until 6 lb. of sugar was consumed. This was all the feeding. Clover even then was not anything like in full flower but the strangers profited fully by what there was and took advantage of the fine weather. I may here remark that my diary enables me to state that only on eight days till the end of August, were they unable to do at least some "work."

On removing the feeder and looking in the hive I was quite surprised to see the progress the bees had made with comb-building, and even more so to find the combs such a mass of brood and eggs.

On July 1 I gave them a ninth frame, with full sheet of foundation, and three days later, when giving them a rack of sections, matters looked so promising that I gave them a tenth frame, contrary to my wont. Not to confuse matters, I may state that this frame (given in place of the dummy outside) was taken out later on, and given to another hive to rear a queen. I estimated that it contained at least 4 lb. honey, almost all then in the hive. Later on the frame which took its place was also removed, a solid mass of honey, on August 10, to be given to a driven lot of bees, another frame being substituted, which latter was, at the end of the season, also removed, and was used for the same purpose. These two, I estimated, weighed 6 lb. and 7 lb. respectively. I still left nine frames for the bees to winter on, containing ample stores.

Now for the racks of sections. They each hold twenty-one sections, and those used had glass back and front for observing the progress made. It was a charming sight to see five racks of these on the hive at one time during August crammed full of bees. In every rack but one I used full, or nearly full, sheets of foundation, *i.e.*, I cut the usual "Raitt" sheets into four parts, which, however, don't quite fill the sections from side to side.

On July 4 I had a look in the hive, and saw that the colony had made marvellous progress. I therefore gave them the first 21-lb. rack, which was full of bees next morning, while the work of drawing out the foundation was so far forward that on the 8th I added another rack. This one was the exception noted above, and consisted of comb sections held over from last year's unfinished ones. This, for obvious reasons, I set *above* the first one. I trusted that the intervening rack would hinder the queen from ascending into the one with ready-built combs—largely drone comb—but, curiously enough, it didn't, and in consequence I had six sections completely spoiled with drone brood. These I deduct from the total, as they certainly were not "surplus." The weather being very warm—and the bees showing signs of loitering—on July 4 I gave them a third rack, again *above*, and simply to cool the hive, not expecting the bees would take possession. It was, however, at once occupied and, as the flight-board still showed too many bees, I gave, on the 18th, a fourth rack, which, to my amazement, on being examined next morning showed the nine centre sections crowded with bees busy drawing out the foundation!

On July 24 I dealt with the two lower racks and then it was that I discovered the drone brood. To my disappointment I was only able to take twenty-four finished sections from the two racks. I therefore made up the partly-completed ones with ten empty sections, placing the rack above the other two then on. Next morning, however, seeing that the bees required still more space, I added a fourth. Another was added on the 31st, but, at the same time, the lower one was removed with twenty sections splendidly filled. After this the work done by the bees was superb! The full heather honey-flow was on and off fifty-three sections taken off on August 5; the majority were heather. Other racks, making up ten in all, were put on between the above date and August 20. Forty-two sections were taken off on August 14, twenty-one on August 30, and twenty-one on September 15. Twelve others were well forward, and the balance not started, as the heather must have given way suddenly early in September—when, I can't say, being away on my holidays.

I give below in tabular form the dates when I put on racks, and when I took off sections:—

Racks of sections put on.			Sections taken off.		
1st	July	4	July 24		24
2nd	,,	8	,, 31		20
3rd	,,	14	Aug. 5		53
4th	,,	18	,, 14		42
5th	,,	24	,, 30		21
6th	,,	31	Sep. 15		21
7th to 10th to	Aug.	20	Total finished, 181.		
Total sections on, 210.					

Add twelve partly finished sections	4 lb.
Three frames weighing 4 lb., 6 lb., and 7 lb.	17 lb.
Total surplus	202 lb.

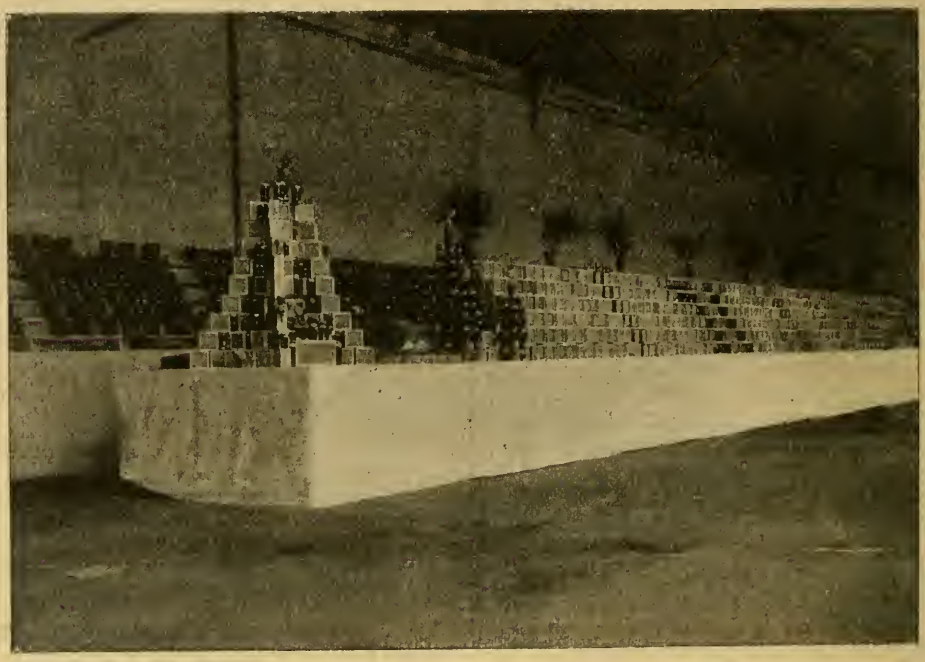
The above is as near as I can give the exact weight of surplus. I wrote Mr. Woodley at an early date, giving him some particulars and predicting a large "take"; but certainly my highest anticipations went little over 100 lb. In a note to our editors I stated that I had taken six racks of sections off and another four on about August 20, and you used the information in B.B.J. in "Echoes from the Hives" (B.J., August 31, p. 344).

Your correspondent "J. M.," Pontypridd, who refers to my "record" in B.J. of October 12 (p. 404), will perhaps allow me to differ with him as to what "Orthodoxy" assumes as the proper number of frames to give a swarm, but

EXHIBITS AT THE "DAIRY SHOW."

[3812.] I send you herewith a photograph (taken by myself) of a portion of the exhibits staged at the late "Dairy Show," which I thought might be suitable for reproduction in the BEE JOURNAL, as possessing some interest at the present time, if you think it worth a place in its pages.—JOHN M. HOOKER, *Herrick House, Lewisham, S.E., October* 28.

[We are very pleased to present a reproduction of Mr. Hooker's photograph, it being of special interest at the present time.—EDS.]



EXHIBITS AT THE "DAIRY SHOW," 1899.

THE DAIRY SHOW.

AN EXHIBITOR'S IMPRESSIONS REGARDING IT.

[3813.] Being an exhibitor at the Dairy Show and present during the week, I should like to give my impressions of the various exhibits. The first thing that one was impressed with was the increase in quantity, and last, but not least, the quality, of honey exhibits. The class for light extracted honey was a grand one, both in quantity and quality; in fact, I have never seen so much first quality honey staged in one competition before. The judges must have had a difficult job to spot the winners. The class for dark honey was also good; and I particularly noticed that the prizes were awarded to some honest dark honey. When I say "honest," I mean the honey contained no heather. Heather honey was also well represented, as was that for granulated honey. The sections class was also a good one, the winning exhibits being pictures. Heather sections were very good, but many of the exhibits had suffered severely in transit to the show.

The four displays or trophies were not only good, but made a very attractive addition to the honey department. What a difference to see 112 lb. in tins and boxes, and the same weight of comb and extracted honey displayed to advantage in different shapes and forms!

One thing would strike most observers pleasantly, viz, that there were no additions to the displays, in the form of mead, vinegar, beeswax, &c., as I think these things should be shown separately and not staged on a collection of honey, as they are misleading, alike to judges and exhibitors. When a schedule specifies "collection of comb and extracted honey," let it be such, with a few flowers, may be, to liven it up a bit, at the discretion of the exhibitor.

Beeswax in the "quality test" class, was very good, but the prizes did not seem to go to the best, according to my opinion. The class for wax in "commercial form suitable for retail trade" was very disappointing. My idea being that this class is intended to teach the bee-keeper how to put up wax in the best form for household use. I therefore understand it is not intended as a quality test class, and so I think the best style and get-up ought

to win, and not the quality. "Interesting" exhibits were good, especially the first, there being honey and wax put to every conceivable use. The interesting "scientific" exhibits were grand, the first being very interesting and useful alike to bee-keeper and scientist. Finally, I should like to see the extracted honey divided up into three classes, instead of two.

As there seems to have been so much talk about lace edging at the Conversazione, how would it do to offer prizes to bee-keepers who could glaze a dozen sections in the quickest time and the neatest style, the glazing to be done at the Dairy Show? I feel sure it would be of great benefit to bee-keepers and beginners in the craft especially.

I hope our editors will accept these few lines as intended in the right spirit and not as "axe-grinding."—H. W. SEYMOUR, *Henley-on-Thames, October* 26.

SECTIONS AND JARS AT SHOWS.

[3814] Mr. Till, as chairman of the recent Conversazione of the B.B.K.A., asks for the opinion of bee-keepers on the questions of lace-paper on sections and size of honey jars, and in giving mine let me say I quite endorse Mr. Scattergood's remarks on page 421. I well remember seeing two splendid exhibits (weighing about 112 lb.), disqualified at the Staffordshire show at Burton, for less than one-sixteenth of an inch infringement of the rule regarding width of edging. Both of these would no doubt have been prize takers but for the lace edging.

I was also pleased to read the chairman's remarks with reference to honey jars, and I think every 14 oz. jar should be disqualified. The public expect 16 oz. to the pound and ought to get it, and I cannot sell my 18 oz. jar at the same price as my neighbours ask for their 14 oz. one. I therefore hold the same opinion as Mr. Till, we want a 16 oz. standard jar and hope we shall soon get it.—A DERBYSHIRE BEE-KEEPER, *Derby, October* 28.

DRUNKEN BEES.

[3815.] I should be sorry to charge my pets with this beastly vice; but they certainly sometimes gorge themselves till they are incapable. Towards the end of the season I place the extracted and still dripping combs which I am not going to reintroduce this year in open racks in the centre of my bee garden. Within ten minutes they are black with bees, sucking every drop that is left, and the turf around is soon covered with bees too full to be able to fly home just yet. They are then quite safe to handle, and show no desire to attack one. I have never seen any bird or toad take advantage of them while in this condition. By the evening they have all got home again somehow. Woe betide any wasp who thinks to share the sweets during the first hour or so! As the bees on the combs become less numerous their yellow cousins come in for the remainder, together with vast numbers of humble bees; more than I should have supposed to exist in the neighbourhood, I have counted twenty-five on each side of a comb, and as there are often twenty combs exposed, that will make a full thousand, besides occasional moths and possibly a hornet or two, who has come, I believe, principally to eat the wasps. None of the insects offer to sting you while taking back the combs to the house; in fact, none ever do when they are feeding unless you are clumsy with them. I have sometimes felt the tiniest of pricks from a humble bee while picking him off, but he does not seem to have any venom to inject with it. I speak of the smaller sorts; I do not know about the big red-tailed fellows, whom I do not feel inclined to provoke.—C. C. JAMES, *Wortham Rectory, Diss, October* 28.

METEOROLOGICAL

OBSERVATIONS TAKEN AT KETTON, STAMFORD, RUTLAND, FOR THE WEEK ENDING OCTOBER 28, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.	Wind.
Oct. 22..	30·38	41·3	53	37	16	44·8	—	NW
,, 23..	30·24	47·2	57	41	16	48·8	—	NW
,, 24..	30·22	49·5	58	39	19	48·2	—	W
,, 25..	30·31	47·8	57	39	18	47·7	·04	W.
,, 26..	29·92	53·0	56	47	9	51·4	·15	S
,, 27..	29·75	53·9	60	51	9	55·4	·75	SW
,, 28 .	29·75	50·2	57	49	8	52·9	.01	SW
Means ..	30·08	49 0	56·9	43·3	13 6	49·9	·95*	—

* Total, 95· in.

Mean vapour tension, 0·308 in.; mean relative humidity, 89 per cent.; mean temp. of the dew point, 45°·6. The rainfall, viz., ·75 in., = 21,491·85 gallons, or 95·95 tons to the acre, or 4·75 lb. to the square foot. For the week ending October 21, the mean temp., viz., 44°·9, was – 2°·8, and the rainfall, viz., ·03 in. (fog), – ·64 in. The mean temp., October 1 to October 21, viz., 46°·3, is – 3°·5, and the rainfall, viz., 1·28 in., – ·81 in.

FRED. COVENTRY.

The Vale, Ketton, Stamford, October 29.

Queries and Replies.

[2296.] *Observatory Hives.*—I want an observatory hive for the purposes of practical study in bee-keeping, and should esteem it a favour if you could indicate the best design and the chief points to be considered, that I may be guided when having it made to order I want a hive, not for amusement or ornament, but for serious and practical observa-

tion; one that will hold a colony and allow it to be viewed without releasing the bees into a room. Your kind assistance will greatly oblige and have my best thanks.—W. P., *Birmingham, October* 26.

REPLY.—We must suppose that our correspondent intends to have the "observatory hive" fixed inside a window or building where an entrance for the bees may be provided from the outside. This being so, the most convenient form of "observatory" is a hive with glass on all sides but the one facing outwards. The frames must hang parallel to entrance, and it will need a brood-chamber capable of holding nearly double the number of frames in actual use. Messrs. Abbott Bros., of Southall, we think, catalogue an observatory hive on the above lines that would suit "W. P.'s" requirements as being capable of examination without the need for opening the hive at all.

Echoes from the Hives.

Wickford, Essex, October 30.—This is my third year with bees and a good one it has been. I have eight stocks and have secured honey enough to bring me in £14 13s. 9d., and my expenses during the year have amounted to £3 5s. This sum, however, includes a new "Guinea" extractor and an uncapping knife, so I have for myself and wife £11 6s. 9d. How is that, Messrs. Editors, for a railway guard in his third year among the bees? I pay £8 per year rent, so you see we, or they, have cleared my rent, and a little over for the G.P.O. savings bank. I make all my own hives, and hope, with your permission, before winter is gone, to give readers an account of how I make them, as bearing on the question raised in B.J. last winter about cheap hives.—C. R.

THE "BATH BEE-CASE."

We have received a note from Mrs. Pavy acknowledging receipt of the sum mentioned in our issue of the 12th ult. (page 399), and requesting us to convey her sincere thanks to the donors of the fund for the assistance rendered her.

Bee Show to Come.

November 16. At the Town Hall, Ludlow. Honey Show in connection with the Chrysanthemum and Fruit Society's Exhibition. Two open classes for honey (Sixes). Schedules, &c., from John Palmer, 17, Brand-lane, Ludlow. **Entries close November 7.**

Notices to Correspondents & Inquirers.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

H. H. (Neath).—*Location for Apiary.*—1. "An old quarry facing south-west" would, we think, make an admirable location for an apiary. It is north and east winds that bee-keepers have most to fear, so that if the quarry wall protects from these, it will be of much advantage. 2. The sample of raw unrefined sugar sent is not at all suitable for bee-food.

C. H. (Knowle).—*Unmated Queen.*—The queen sent was too dry for post-mortem examination before we got a chance to operate, but we have very little doubt from the appearance that she was a virgin.

ROSS (Kent).—*Qualifying for Second Class Expert's Certificate.*—The books you have named will amply suffice for the examination referred to above.

G. S. (Colesbourne).—*Beeswax for Exhibition.*—Of the three samples sent, we prefer No. 3, No. 2 being next in quality. No. 1 is too dark in colour, and contains a larger amount of pollen than is suitable for show purposes. All three samples, however, have a slight trace of being scented by artificial means, and this is a bad feature in wax for exhibition.

NOVITIATE (Lancashire).—*Comb Smashed in Post.*—We assure our correspondent that no mistake was made in our reply on page 418. While regretting therefore the disappointment felt at the result, it shows that putting a piece of comb (containing what is supposed to be foul brood) in the corner of a common envelope furthest away from the stamp is practically no protection at all, for the sample was smashed into a pulp.

"E." (S. Devon).—1. There is a very appreciable quantity of heather honey in sample sent, but it is by no means wholly from that source. Moreover, the "flower-honey" (as our Scotch friends term all that does not come from heather) in sample shows signs of fermentation having been set up. 2. If it is decided to use the honey as bee food we advise its first being brought to boiling point after being thinned down with hot water. The only reason we can offer for the diminished size of bees in your hive since 1897 is that they may be the progeny of a different queen. But are you sure the bees are smaller? They may look smaller than when you first possessed a hive two years ago.

Editorial, Notices, &c.

THE OCTOBER CONVERSAZIONE.

EXHIBITING AND EXHIBITORS.

The annual gathering at the October *conversazione* of the B.B.K.A. may now be regarded as the single opportunity afforded each year for the interchange of views and experiences by a body of bee-keepers sufficiently large to represent in some measure the bee industry of the Kingdom. But, however opportune the occasion, we are not quite sure that the fact of the Dairy Show being in full swing at the same time does not exercise a somewhat demoralising effect, so far as lessening the judicial value of the opinions expressed at the October Meeting of the Parent Association, held at Jermyn-street. The majority of those present have, presumably, spent the day at the Agricultural Hall, and, in consequence, would naturally be more or less influenced by what they had seen and heard at the Show. That being so, those who were themselves exhibitors could scarcely avoid suspicion of "bias," one way or the other, by success or failure, as the case might be, and would therefore lack the unprejudiced judgment with which the independent observer is rightly credited.

It is no less desirable than useful to hear both sides on all questions possessing general interest, and not being present, either at the Show or the subsequent conversazione, it will be understood that our remarks are based mainly upon the account of the proceedings, as reported in the B.B.J. of October 26 and November 2. From this we gather that the subjects discussed — upon which opinions varied — were almost wholly confined to matters connected with exhibiting at shows, and the several issues, being clearly defined, may be briefly enumerated as follows:—(1) Width of lace-paper edging on sections; (2) Holding capacity of reputed 1-lb. glass jars; (3) Judging comb-honey in sections without tasting; (4) Duplicate prizes for exhibitors in the same class; and (5) Defining "colour" in extracted honey for exhibition. These five questions involve matters upon which unanimity of opinion is next to impossible. We may, however, endeavour to place before our readers views sufficiently moderate to afford a reasonable solution of the several difficulties, so far as we understand them.

Taking the questions *seriatim*, we come to—

Lace-paper Edging.—The gentleman who introduced this subject—though now an esteemed member of the B.B.K.A. Council—is either unaware of, or else overlooks, the fact that this question was brought to the notice of the Council some years ago, in consequence of exhibitors gradually increasing the width of edging allowed for decorative purposes round sections of comb-honey, until its use became grossly abused. It is admitted on all hands that defects in a section may be hidden by the lace edging, and although the judge is empowered to remove all coverings in order to examine the comb, the ordinary visitor to a show has no such privilege, and, in consequence, what bore the appearance of misplaced awards were frequent. This naturally gave rise to discontent, followed by complaints to the Council of the B.B.K.A., and resulting in the framing of a rule regarding width of edging. Now, if a limit as to width is clearly defined (as it now is by the 3½ in. square of comb surface, free of paper), and the need for such limitation is admitted, there should, in common fairness to all, be no divergence of opinion as to strict observance of the rule, seeing that to allow of any infringement does away with its value entirely. Nor does it require more from an exhibitor than sufficient watchfulness in either "erring on the safe side," if at all, or else examining his selected sections before packing them for the show bench, and after setting on the glass surface his 3½ in. square of cardboard, to cut off all paper within the defined space, and thus render his exhibit "safe."

Show-Jars for Extracted Honey.—The second point for notice, viz., holding capacity of reputed 1-lb. glass jars for extracted honey, has, to our mind at least, no connection whatever with "exhibiting" at honey shows, nor can we see where the merit of an exhibit is in the slightest degree affected by the fact of a reputed 1-lb. jar holding 14 or 16 oz. The exact weight of honey in a jar is purely a commercial question as between buyer and

seller, and may therefore be passed by, so far as the show-bench is concerned.

JUDGING COMB-HONEY.—The question of sampling or tasting comb-honey in sections when judging, which stands next in order, is a much more important one for all concerned, and there was considerably more point in the remarks made on the subject at the meeting. For ourselves, however, we fear no good would arise from adopting a rule making it compulsory to taste all sections. The option of tasting may, we think, well be left to the judge, because any experienced man, who is competent, will naturally sample the honey if a doubt exists in his mind, or in a close competition. On the other hand, there are scores of cases where the quality of honey, and even its source, are as plain to the eye and nose as to the tongue; and it is, we think, mainly out of consideration for exhibitors themselves that in such cases sections are not damaged by breaking the sealing. If judges were all careful enough to limit their "tasting" to one cell, no great harm is done; but exhibitors know from past experience whether this is the rule or not.

DUPLICATE AWARDS.—Here again the remarks of the several speakers who took part in the discussion made it clear that there are valid grounds for complaint; but we must not lose sight of the fact that bee-keepers cannot hope for exceptional treatment at the hand of our important Agricultural Societies, especially when it would involve disarranging "rules and regulations" with regard to awards. To insist on anything of the kind would probably lead to the exclusion of the bee-industry from the show altogether. Therefore, however desirable might be the change recommended at the meeting, it could only be carried out at smaller shows, or where the rules are not too stringently enforced.

COLOUR OF EXTRACTED HONEY.—On this, the final point we have enumerated, it is satisfactory to note that an effort is to be made to meet the difficulty of defining the exact colours in the several classes for light and dark extracted honey. The Council of the B.B.K.A., at the monthly meeting held on the 3rd inst., decided to take steps for indicating clearly to exhibitors the exact colour available for each of three classes for extracted honey, *i.e.*, "light," "medium," and "dark." If a practical plan can be formulated for securing the desired end to the satisfaction of all concerned, a much felt "want" will be filled, and should failure result it will not be for lack of effort in the endeavour to ensure success.

BRITISH BEE-KEEPERS' ASSOCIATION.

The monthly meeting of the Council was held at 105, Jermyn-street, S.W., on Friday, the 3rd inst., Mr. T. I. Weston being voted to the chair. There were also present Miss Gayton, Major Fair, Messrs. R. C. Blundell, W. Broughton Carr, J. M. Hooker, H. Jonas, J. H. New, E. D. Till, E. Walker, and the Secretary. Letters explaining absence were received from a number of members of the Council unable to attend.

The minutes of the previous meeting were read and confirmed.

Miss F. Aukland, 85, Cazenove-road, N., was duly elected to membership.

The Finance Committee's report, presented by Mr. New, gave an account of income and expenditure to October 31, and was adopted.

Suggestions made at the recent conversazione in regard to the classification of extracted honey at shows, and the question of lace-edging for section honey were fully considered, and it was eventually unanimously resolved that at the shows to be held in 1900 there should be three classes for extracted honey, viz., light, medium, and dark coloured, and that for section honey the face of the section must show $3\frac{1}{2}$ in. by $3\frac{1}{2}$ in. of glass, clear of paper edging.

Mr. W. Herrod's report upon his work as expert apiarist during the past season was received and passed.

The Secretary was authorised to communicate with representatives of the bee-keeping industry in Yorkshire in regard to arrangements for the Royal Show to be held at York in June next.

CRYSTALLISATION OF BEESWAX.

ITS INFLUENCE ON THE FORMATION OF THE CELLS OF BEES.

It will be remembered that when Messrs. Dawson and Woodhead's paper was published in B J. on October 5 (page 390), we in a footnote on page 392, notified our having sent "advance proofs" of the paper to our Senior editor in California. Mr. Cowan at once took the matter up and his views on the subject are given as follows :—

In a paper read at the Dover meeting of the British Association, held in June last, and which appeared in B.B.J. of October 5, page 390, the authors, Messrs. C. Dawson and S. A. Woodhead, advance the theory that the

hexagonal arrangement of the cells in comb is not due to a structural instinct of bees, but that this form is principally the result of crystallisation, on gradually cooling, of molten wax. In arriving at this conclusion it appears the authors melted a thin slab of wax in a shallow tray and then placed the molten wax to cool gradually in a warm atmosphere without draughts; and, on subsequent examination, they found hexagonal cells of the ordinary size of worker-cells gradually formed on the bottom and top surfaces during the process of cooling. A piece of this cooled wax sheet was then given to the bees and it would seem they utilised it, while a plate of wax formed by compression was discarded by them. From this they consider that (to quote from the third par on page 392 of B.J.) :—"when in a natural state the newly secreted wax is formed into a small pendent plate, it is probable that the bees crowding around produce the required amount of heat to soften or to keep soft the newly deposited wax, and allow it to cool very gradually when a few crystalline bodies form within the plate, and these must be soon afterwards hollowed out and built upon."

But, while allowing that the authors are correct as to the crystallisation of beeswax on cooling—a phenomenon not uncommon with other animal fats—we would like to point out where we are not prepared to agree with them and where we think their theory breaks down. In the first place, beeswax melts at 145 deg. to 150 deg. Fahr., and is plastic at 85 deg., at which temperature it is readily moulded and kneaded into shape. In the secretion and production of beeswax, however, a temperature of from 87 deg. to 98 deg. is required. Now we know that when subjected to any temperature higher than the last-named, bees become uneasy and leave their hives. Therefore, although bees are able to control the temperature by close or loose clustering, within certain limits, we are not prepared to admit either that they can raise it to 145 deg. (the melting point of wax), or regulate the cooling in such a gradual manner as to produce the proper sized crystallisation. Then, again, Messrs. Dawson and Woodhead do not suggest how bees could possibly maintain in a perpendicular position the "small pendent plate"—as they designate it—of molten wax without the latter running down, as, of course, it must be in a liquid condition before it could crystallise. On the other hand, wax-scales, when removed from the ventral plates of a bee are in so plastic a condition that they can be kneaded into any shape at the ordinary temperature of the hive. We must also bear in mind that the least deviation in temperature during the cooling process affects the size of the hexagons; either reducing to microscopic dimensions or enlarging them to nearly an inch across, so that this new theory credits the bee with even greater intelligence than is usually accorded to it. The construction of drone cells has also to be accounted for, to say nothing of queen cells. In our climate we have never found the temperature inside a hive to reach 100 deg. Fahr., 98 deg. being the highest we have ever recorded, the bees swarming at this temperature.

The authors' experience with plain wax-sheets also differs from ours, for in the sixties those who kept bees will remember that only strips of plain wax were commonly used as guides. Careful observation will show that bees commence by first kneading the wax-scales and then sticking the prepared wax to the roof of the hive. To this first layer others are added, the work being begun in different places at the same time. It would then be seen that small shapeless blocks of wax hang down from the roof, and it is these blocks that the bees scoop out with their mandibles and so form the earlier cells, adding what wax is removed to the edges. Mr. Tegetmeier many years ago carried out a series of experiments by inserting flat parallel-cells, adding the excavated wax to the margin so as to constitute a cylindrical cell. As other excavations were made in contact with those previously formed, the cells became flat-sided. Müllenhoff also demonstrated that mutual interference — or outside pressure—forms the hexagons, as all circles coming in contact with each other naturally assume this form. The rhombs at the bases of the cells are formed in the same way, by two layers pressing in opposite directions. Bees make their cells round just as wasps and hornets do, and every observant bee-keeper will have noticed that the outside cells of a comb are usually circular on the free side.

The prior or initial cell of a wasp's nest is also circular, and it is only when surrounded by six other cells that mutual interference causes the whole to assume the hexagonal form. Here, too, the bases are round simply because there is only one row of cells, and, consequently, no interfering cells to produce the rhombs. The wasp constructs her cell of wood, which she chews and kneads into a sort of paper pulp, without any guide as to form; and we can hardly think that our bees are unable to do the same thing with wax.

Bees deal with the Van Deusen or flat-bottomed foundation, when given to them, just in the way the authors describe, and scoop out the cells in order to produce the three-sided bases.

In conclusion, we would say that in one respect the experiments of Messrs. Dawson and Woodhead are interesting to the bee-keeper, inasmuch as they demonstrate that, however faint may be the hexagonal impression upon the plate of wax, the bees are willing and ready to accept it as a guide for the commencement of their cells. We might also incidentally point out that even the hexagonal shape is not necessary, as bees will readily accept simple circular pits in wax-sheets if they are the right distance apart, and will construct their combs upon them.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

LACE EDGING FOR SECTIONS.

THE WIDTH OF MARGIN RULE.

[3816.] It seems to me—and I should have thought that in the mind of any one who has had to arrange affairs for other folk it would have been a truism—that if a rule has been framed to guide public competition it must be rigidly adhered to. The most trifling departure from it on the part of a weak or too good-natured judge is bound to cause discontent. Hence, as long as the rule exists regarding width of margin in lacing sections there should be no allowance made for those who neglect to obey it. Nor, indeed, should there be any sympathy for the disqualified, because, although they may not *exceed* the limit, they can make their lacing as narrow as they like, so that aiming, say, at ¼ in. margin, where the limit is ⅜ in., even an unskilled hand will be on the safe side. This refers chiefly to those who fix their own lacing; the trade would certainly find it to their interest to conform with a rule properly enforced.

Again, should the limit be abolished, the width of lacing would increase to such an extent that every section case in certain exhibits might need opening to enable any one to judge the sections. I have myself this year seen 1¼ in. margins. The time of the judge would thus be wasted, and how often has he any to spare?

Mr. William Woodley is, I believe, the introducer of a system of glazing sections, which is of great commercial value, and for this he deserves the thanks of all comb-honey producers. But whether it should be allowed on the show-bench under a rule that the glazing must be "capable of easy removal by the judges," is another matter, seeing that, in this case, removal practically involves replacing. The lacing may be torn asunder or cut through without effort, but how is the glass to be replaced? If not, the sections remain unglazed, which is, for many reasons, objectionable at the time, while it must be a serious disadvantage to the exhibitor when it comes to repacking. Thus the abandonment of a definite rule with regard to width promises to land us in a swamp of difficulties.

For my part, I am firmly of opinion that the judges should make a practice of opening sections whenever a final decision becomes a critical matter, and that they should not hesitate to taste them. Tasting is done when necessary in the case of fruit exhibits, and there are strong reasons why it should be resorted to in the case of comb-honey, if only because the probability of its being done would be the best possible check on fraudulent methods of production. As touching on this, I feel compelled to join in deploring the line taken by Mr. Hooker and endorsed by the Chairman at the recent *Conversazione*, in answer to Mr. Gordon's remarks, as reported on page 422 of this JOURNAL.—SOUTH DEVON ENTHUSIAST, *November* 4.

"A PAYING SWARM."

[3817.] Your correspondent, "D. M. M.," who writes on page 432, is too modest—much too modest. The fact that the bees come from the apiary of Mr. Woodley may possibly have something to do with the result, but, for myself, I have yet to be convinced that there is any one spot in Britain where bees can be bred to excel those bred in other parts of the country. I repeat, "D. M. M." is too modest, and I have, myself, no doubt that the splendid "take" is due to the manner in which he secured to the full all the advantage of the prolonged inflow with which he was favoured. I believe we may assume from "D. M. M.'s" account, that his honey-flow commenced early in July (by which time the hive was full of young bees), and continued without intermission until at least the middle of September—a period of about ten weeks. Here then, in short, is the explanation: a judiciously-managed swarm, having a polific queen at its head, working during an exceptionally long harvest.—J. M., *Pontypridd, November* 6.

THE SNOWBERRY.

SYMPHORICARPUS RACEMOSA.

[3818.] Arising out of the discussion at the Conversazione of the B.B.K.A. on Thursday, October 19, on *Tilia petiolaris*, a member asked if any one could tell him the proper name of the flowering shrub, commonly called Snowberry, and stated he had searched several books, and was unable to find it. No one at the meeting was able to furnish the information asked for. I have just received a catalogue from Messrs. Cheal & Sons, Crawley, and find it named *Symphoricarpus racemosa*. —RICHD. C. BLUNDELL, *Benhams, Horley, Surrey, October* 26.

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

What some would call the "tight fitting" but neat little apiary of Mr. Fenney, seen on next page, is very creditable as the handiwork of one whose business of "Monumental Mason and Builder" can hardly be supposed to assist him in joiner-work. The scarcity of room has

also, we expect, led our friend to range the hives on long benches or stands, to which some beemen would no doubt take objection. However, it serves to show that "where there's a will there's a way" and if the bees are perhaps so placed as to need more than ordinary care for lack of room, such difficulties can be overcome. Nor need we doubt that with a good district and a roomier apiary, Mr. Fenney would not be satisfied with the half takes which seem to "content" him in his present location. Writing of himself, he sends the following interesting particulars :—

"I have been brought up among bees, my father and grandmother having kept them ever since I can remember, and that is over thirty years. We had, however, in my early days no bar-frame hives, though I remember some wood hives with glass doors, so that we could see the bees at work. I was very proud when my father gave me a swarm to begin bee-keeping on my own account, but my start was not a propitious one, as I lost my swarm and so did no good. My present apiary was started, in 1885, through my occupation of a monumental mason taking me to a churchyard about four miles from my own village, and while I was renewing a headstone a swarm of bees came out of the church roof (the roof was covered with lead) and settled in a tree close to where I was at work. Thinking that I had as much right to the bees as any one else, I borrowed a skep and hived them, and got them safely home with me, but thought it only right to make some recompense, so I went to the church when the harvest thanksgiving service came round and gave half-a-crown to the collection 'for luck,' as the saying goes. Well, my captured swarm did very well, and I afterwards built a bee-house to hold six hives, this being about as many as I thought I should be able to keep at one time. I soon outgrew this idea, and after purchasing a couple of frame hives as patterns, I have made my own, which now number thirty. I have, however, so far only increased my stocks to fifteen, so I am well provided in advance, and can take a rest before making any more. The busy season with bees is generally the busiest time at my ordinary trade, so that the bees are sometimes neglected when they most need looking after. I am thankful to say foul brood has not troubled me much, for only once have I had to destroy a stock. I am the only bee-keeper in the village now, whereas in the old skeppist days I can remember nine or ten neighbours who kept a few stocks. I have still to learn the art of breeding queens to replace old ones, but find if I wish to succeed fully with the bees, I must do so. I have the 'Guide Book,' which is a great help, and from the BEE JOURNAL I get many useful hints. You will no doubt see from the photo of my bee garden that my hives are a bit crowded for want of room, and that they are very close

MR. J. B. FENNEY'S APIARY, KIRBY-IN-CLEVELAND, YORKS.

to the house—in fact, rather too close to be quite safe for the little ones. I am thankful to say that I can now work among bees with very little danger of being stung.

"I cannot report any big 'takes' of honey, like so many of your readers, but am generally content with what the bees have to spare for me. It is a pleasure to work among them!

"My hives are all made to take the standard frame, and I work both for sections and extracted honey, using shallow-frames for the latter. The district, however, is not a good one, or else I do not possess the knack of managing my bees as some do. Indeed, I am content if I get half the amount I read of in your journal. The chief sources of honey are clover, beans, fruit bloom, and heather. We have no limes, but a good many sycamore trees, and the bees seem to work well on them when in bloom. I cannot say that we have a very good sale for honey in our district, or else I am a poor salesman, for I generally have some left on hand, which goes to my friends."

WEATHER REPORT.

WESTBOURNE, SUSSEX.

OCTOBER, 1899.

Rainfall, 2·87 in.
Heaviest fall, 1·23 in., on 1st.
Rain fell on 8 days.
Below average, 1·11 in.
Maximum Temperature, 64°, on 29th.
Minimum Temperature, 30°, on 14th.
Minimum on Grass, 25°, on 14th.
Frosty Nights, 2.
Sunshine, 163·5 hrs.
Brightest day, 13th, 10 hours.

Sunless Days, 4.
Above average, 37·9 hours.
Mean Maximum, 55·5°.
Mean Minimum 40·4°.
Mean Temperature, 47·9°.
Above average, 0 5°.
Maximum Barometer, 30·50°, on 22nd.
Minimum Barometer, 29·10°, on 1st.

L. B. BIRKETT.

METEOROLOGICAL

OBSERVATIONS TAKEN AT KETTON, STAMFORD, RUTLAND, FOR THE WEEK ENDING NOV. 4, 1899.

1899.	Bar. in.	Tem. 9am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.	Wind.
Oct. 29..	29·86	55·0	60	50	10	54·9	·62	S
,, 30..	29·64	45·0	53	44	9	48·4	—	NW
,, 31..	29·87	47 8	54	38	16	45·8	—	S
Nov. 1..	29·94	45·2	58	38	20	48·0	—	S
,, 2..	29·51	57·9	61	42	19	51·5	—	S
,, 3..	29·43	54·0	58	50	8	54·0	·38	S
,, 4 .	29·53	49 2	62	44	18	53·0	·17	S
Means ..	29·68	50·6	58·0	43·7	14·3	50·8	1·17*	—

* Total, 1·17 in.

Mean vapour tension, 0·315 in.; mean relative humidity, 86 per cent.; mean temp. of the dew point, 46°·1. The rainfall, viz., 1·17 in., = 26,468·91 gallons, or 118·17 tons to the acre, or 5·85 lb. to the square foot. For the week ending October 28, the mean temp., viz., 49°·9, was + 4°·3, and the rainfall, viz, ·95 in., was + ·34 in. The mean temp., October 1 to October 28, viz., 47°·2, is − 1°·5, and the rainfall, viz., 2·23 in., is − ·47 in.

OBSERVATIONS TAKEN AT KETTON, STAMFORD, RUTLAND, DURING OCTOBER, 1899.

Barometer.

(135 ft. above Mean Sea Level.)

Highest, 30·38 in., on the 22nd.
Lowest, 29·25 in. on the 2nd.
Range, 1·13 in.
Average height, 30·00 in.

Thermometer.

(145 ft. above Mean Sea Level.)

Highest Max. Shade Temp., 66 deg., on the 12th.
Lowest Max. Shade Temp., 51 deg., on the 14th.
Highest Min. Shade Temp., 51 deg., on the 27th.
Lowest Min. Shade Temp., 29 deg., on the 20th.
Range, 37 deg.
Greatest Daily Range, 30 deg., on the 8th and 10th.
Least Daily Range, 4 deg., on the 4th.
Highest Shade Temp. at 9 a.m., 55 deg., on the 29th.
Lowest Shade Temp. at 9 a.m., 35 deg., on the 20th.
Highest Mean Daily Temp., 54·9 deg., on the 29th.
Lowest Mean Daily Temp., 40·2 deg., on the 20th.
Mean of Highest Daily Readings, 56·7 deg.
Mean of Lowest Daily Readings, 38·7 deg.
Mean of Daily Range of Temp., 18·0 deg.
Mean Temp. of the Month, 47·7 deg.
Numbers of days frost in shade, 7.
Mean of Dry Bulb Readings, 46·0 deg.
Mean of Wet Bulb Readings, 44·1 deg.
Mean Vapour Tension, 0·272 in.
Mean Relative Humidity, 87 per cent.
Mean Temp. of the Dew Point, 42·1 deg.

Rainfall.

(Gauge, 146 ft. above Mean Sea Level.)

Number of days on which ·01 in. or more fell, 10.
Greatest Fall in 24 Hours, 0·75 in. on the 27th.
Total Fall in the Month, 2·85 in. − ·13 in.

FRED. COVENTRY.

The Vale, Ketton, Stamford, November 5.

Queries and Replies.

[2297.] *Bees in Skeps Short of Food.*—I have just purchased four stocks of bees in skeps, and now find that they are sadly in want of stores for the winter. I therefore want to know:—1. Which is the best way to feed them now in the skeps? 2. As I intend transferring the bees to bar-frame hives at first opportunity, would you think it wise for me to place the skeps above the frames in wood hives (after removing bottom boards from skeps) so that the bees can descend below to the bar-frames as soon as they like? Or had I better keep them just as they are in the skep with the bottom board, as I bought them, until next spring? 3. Would it be too late to turn the bees into the wood hives and give them sealed stores of honey or candy? 4. Can you give a more detailed description of how to make the tube-feeder, for *feeding bees in skeps*, as mentioned on page 430 of last week's B.B.J.,

exhibited and explained by Mr. Reid, or could I have his address to write him for same? I am in a little difficulty how best to preserve the bees till the spring, so your advice will be gratefully received.—"Scio," *Bournemouth, November* 6.

Reply.—1. It is now too late in the year for bees to take syrup-food in sufficient quantity for wintering on—to say nothing of the risks involved in wintering them on unsealed stores. You will, therefore, have to rely on well-made soft candy inserted in feed-hole at top, and renewed as often as it is carried down. 2 and 3. Keep the bees in their present skeps till spring. 4. The tube-feeder referred to is entirely unsuited for feeding colonies short of winter stores.

[2298.] *Fixed Combs in Frame Hives.*—I shall be extremely obliged if you will advise me what to do in the following circumstances:—I have become the owner of three stocks of bees in wooden hives; on examining the hives, I found a rack of sections in each; in one rack there was no honey, in the second two pounds, and in the third all the sections were well filled. On looking at the frames underneath, I found that they had evidently never been taken out since they were put in; the combs are all built across so that the whole seems to be fixed in an immovable mass. I have done nothing at present save removing the sections, and the frames below seem to be well filled with honey to last the winter. The man from whom I had the bees told me that he had never taken out the frames, and another man who had kept bees for many years and came to look at mine, told me that one of the best lots of bees he ever had were in a hive, the frames of which remained unmoved for nineteen years! I need not explain that I am quite a novice; I suppose my question shows that only too plainly. I have long been interested in bees, and have made a start at keeping them.—W. Bracey, *Herts, November* 6.

Reply.—The bees must be wintered in the hives as they now stand, after covering down warmly with quilts above the frames. Write us again in spring and we will advise further.

CAPTAIN J. E. HETHERINGTON,

THE MOST EXTENSIVE BEE-KEEPER IN THE WORLD.

After more or less investigation I have come to the conclusion that Capt. J. E. Hetherington is by far the most extensive bee-keeper in the world. He has been managing, and has operated successfully, too, in the neighbourhood of 3,000 colonies, probably for the last ten or fifteen years, and I do not know how much longer. There are, perhaps, a dozen bee-keepers in the United States who own and operate anywhere from 1,000 to 1,500 colonies; but I think there is not one who reaches the 2,300 mark, and certainly none that reaches the 3,000, except that veteran who, in the Civil War, rendered his country such distinguished service.

His record as a soldier is fully set forth in the A B C of Bee Culture, in the Biographical Department, and I need not dwell here particularly upon that, any more than to state that he was captain of a company of sharpshooters—a position that means a great deal more than to be captain of an ordinary company of infantry. Three times he was wounded, and finally was discharged on account of the disability from his wounds. At the close of the Gettysburg campaign his name was sent up to the War Department as one who had rendered gallant service for his country.

But it is of his record as a bee-keeper that I wish to speak more particularly. It may not be generally known, but he was the originator of the no-drip shipping-case that is now used almost universally throughout all civilised bee-dom. When we first introduced this case five years ago, it was brought to our attention by the commission houses, who urged upon us the importance of making our cases on the no-drip plan. Where it originated we did not then know; but after we gave bee-keepers a chance to get them they jumped almost into instantaneous popularity. I learned later on that it was Capt. Hetherington who first began using them; and some commission houses, seeing the cases that the captain used, no doubt began to urge their customers to adopt them here and there, but before any bee-keeping-supply establishment had come to know very much of their merits.

Almost in the same way the tall section came into prominence. Where it came from, no one really seemed to know; but Mr. Danzenbaker, when he called at Medina, said he saw it first at Capt. Hetherington's. That the captain was the first to introduce it, I think there can be no question, for all the evidence points that way. Mr. Danzenbaker was so well pleased with the section and its selling qualities on the market that he immediately adopted it, and threw aside the 4½ square section which he had previously used in what he then called his Dual hive.

Indeed, after Mr. D. visited the captain he came back with a number of new ideas, and among them was closed-end frames; and in this connection I would say that Mr. Hetherington was the first man to make a really practical thing of closed-end frames. True it is that Mr. Quinby invented them, and came very near adding to them their finishing touches. But as Mr. Quinby originally used them in his particular form of hive, the frames were by no means as easily handled as in the particular form used by Capt. Hetherington; and from this originated the Hetherington-Quinby frame and hive that are used so much in certain sections of New York.

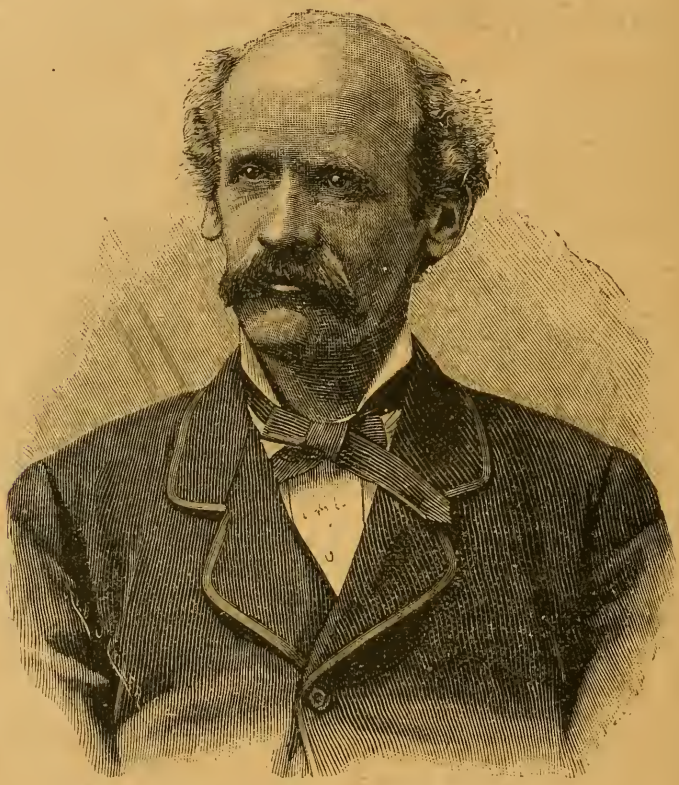
In these days, when the matter of trans-

parency in foundation, is so highly prized, it may be well to remember that Mr. Hetherington was probably the first to get out what was really the first transparent foundation. Those of us who bought the "Van Deusen" flat-bottom article years ago will remember how beautiful and transparent it was, and that nothing has been made of late years that was any clearer or more beautiful. Whether it had the same pliable qualities that are found in the "Weed" transparent foundation, I cannot say.

It was Capt. Hetherington also, I believe, who first conceived the idea of incorporating fine wires into the foundation itself. A patent was granted, and for years the Van Deusen's made what was called their wired flat-bottom foundation under royalty from Mr. Hetherington.

In the matter of fishbone in comb honey, it was Capt. Hetherington who first saw the importance of reducing the amount of wax in the base and putting as much as possible in the wall. We have talked a good deal about this of late, but really Mr. Hetherington was ahead of all of us in this.

Super springs, a device for pressing sections together while on the hive, and which have recently come into prominence, were the invention of Capt. J. E. Hetherington—at least he used them away back in 1872, and has used them continuously till this time. This one fact alone speaks volumes for their practicability; and it is strange that we of these latter days did not discover their value sooner. Mr. Danzenbaker first saw them used in California, in the apiary of Mr. Mendleson; but the springs he used were a little different from those Mr. Danzenbaker had placed in his comb-honey supers. And now it appears that E. P. Churchill was another one who had prior use of them; but Capt. Hetherington comes ahead of them all in point of time.



CAPTAIN J. E. HETHERINGTON.

Notwithstanding the fact that the Captain probably produces the largest crops of honey of any bee-keeper in the world, there is probably no other bee-keeper on the face of the earth who puts out a higher-grade article of comb honey than he. There are certain buyers who will take his honey every year at one or two cents a pound above the market; and the

reason of this is plain. His comb-honey is always in tall boxes, and put up scrupulously neat and clean in no-drip shipping-cases such as he himself originated.

Although he is now quite well advanced in years, I think I never met one who is more enthusiastic about bees and bee-keeping than he. A charming conversationalist, he fairly bubbles over with ideas. When he is present at a convention I always regard it as a rare treat to meet him.

I have felt for some time that this prince of bee-keepers was not receiving the recognition that he really deserves, and that some of the inventions we now so highly prize, and the product of his genius should now be duly credited.

With all his other qualities the Captain is an exceedingly modest man — rather shrinking from notoriety, and yet perfectly willing to contribute and help to elevate the pursuit ; a busy man, he has no time to write letters ; for his extensive business, unless he kept a stenographer, would hardly permit him to do much in that line.—Editorial in *Gleanings*.

OUR LIBRARY TABLE.

There has been quite an accumulation of books for review on our table, most of them reprints or new editions of foreign works. We now notice some of the most important, so that our readers may know what is going on in bee literature of countries outside our own :—

"*Lettres inedites de François Huber pour faire suite aux 'Nouvelles Observations'*;" *avec une introduction de Ed. Bertrand.* Published by the Revue International d'Apiculture, Nyon, Switzerland ; price, three francs.

Undoubtedly the most prominent bee-keeper of the present century was François Huber, and his "Nouvelles Observations sur les Abeilles" was one of the most marvellous works ever written on bees. M. Bertrand in his preface says, "If there are still any literary productions of the end of last century read, it is well known in what proportions. There is hardly one book in ten thousand that has resisted the trial of time. . . . And as regards works on science this proportion is very much smaller. Everything has changed, everything has been improved so rapidly, that a description of the ideas of a century ago, do not generally interest us. Of the immense number of scientific works there are only very few which are able still to instruct us, and these are nearly all works on natural history. Amongst these select few the 'Nouvelles Observations' of Huber sparkle with special splendour, made up of qualities so harmonious and original that one seeks for them elsewhere in vain." The first editions of Huber's "Observations" appeared in 1792, and the second in two volumes in 1814. It was this last which made the reputation of Huber, placed him in the front rank of scientific observers, and enables us at this time to look on him as the founder of modern apiculture. This book is a standard work at the present day, and it is surprising how few errors have been found in it, and when we recollect that Huber was blind and had to make all his observations through other eyes, the accuracy with which they were made is simply marvellous ! Anything coming from the pen of such a writer is specially interesting to every bee-keeper, it was therefore with pleasure that we published translations in 1891 of some letters which came into our possession when M. Bertrand and M. G. de Layens joined us in a tour amongst the bee-keepers at Ivray. In the B.B.J. for 1891, pages 172 and 196 will be found an account of how these letters came into our possession, and on page 547 the first of these letters appears. Since that time M. Bertrand had placed at his disposition by M. G. Motin, a grandson of F. Huber, about sixty other letters, which first appeared in the *Revue Internationale*, and have now been gathered into one volume. The letters are full of interest to bee-keepers, and contain much information about bees, They form a fitting sequel to "Nouvelles Observations," and bee-keepers are greatly indebted to M. Bertrand for having saved them from oblivion by publishing them in this compact volume.

The A.B.C. of Bee Culture. By A. I. Root. Revised by E. R. Root. Pub. by the A. I. Root Company, Medina, Ohio.

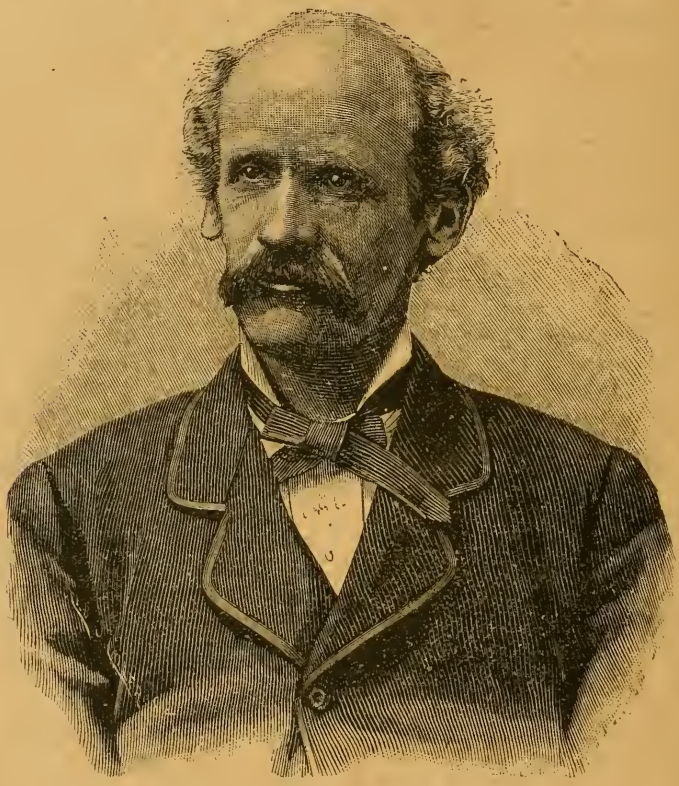
We are pleased to welcome a new edition of this well-known work. Its popularity can be estimated from the fact that this is the sixty-seventh thousand issued since the first came out in 1878. The original author has ceased to take an active part in the work of the apiary, but his mantle has fallen upon able shoulders in the person of his son, E. R. Root, who presents us with this revision. When it was first issued, Mr. A. I. Root decided to keep the type standing, so that the book could be printed as wanted, and any alterations made when errors were found. All new inventions could also be introduced into the work as soon as tested, for it is one of the first principles of the writers to submit every thing to a sufficient practical test in their apiary before embodying it in this book. Bee-keeping is making such rapid progress that books written five or six years ago even are quite out of date now ; however, it will be seen that special value attaches to a work of this sort that is so frequently gone through and corrected. This edition has been thoroughly revised by E. R. Root, and we might say it has been in great measure re-written. Amongst those articles that have been entirely recast are "Apiary," "Artificial Comb," "Comb Foundation," "Foul Brood," and many others. Then, in

parency in foundation, is so highly prized, it may be well to remember that Mr. Hetherington was probably the first to get out what was really the first transparent foundation. Those of us who bought the "Van Deusen" flat-bottom article years ago will remember how beautiful and transparent it was, and that nothing has been made of late years that was any clearer or more beautiful. Whether it had the same pliable qualities that are found in the "Weed" transparent foundation, I cannot say.

It was Capt. Hetherington also, I believe, who first conceived the idea of incorporating fine wires into the foundation itself. A patent was granted, and for years the Van Deusen's made what was called their wired flat-bottom foundation under royalty from Mr. Hetherington.

In the matter of fishbone in comb honey, it was Capt. Hetherington who first saw the importance of reducing the amount of wax in the base and putting as much as possible in the wall. We have talked a good deal about this of late, but really Mr. Hetherington was ahead of all of us in this.

Super springs, a device for pressing sections together while on the hive, and which have recently come into prominence, were the invention of Capt. J. E. Hetherington—at least he used them away back in 1872, and has used them continuously till this time. This one fact alone speaks volumes for their practicability; and it is strange that we of these latter days did not discover their value sooner. Mr. Danzenbaker first saw them used in California, in the apiary of Mr. Mendleson; but the springs he used were a little different from those Mr. Danzenbaker had placed in his comb-honey supers. And now it appears that E. P. Churchill was another one who had prior use of them; but Capt. Hetherington comes ahead of them all in point of time.



CAPTAIN J. E. HETHERINGTON.

Notwithstanding the fact that the Captain probably produces the largest crops of honey of any bee-keeper in the world, there is probably no other bee-keeper on the face of the earth who puts out a higher-grade article of comb honey than he. There are certain buyers who will take his honey every year at one or two cents a pound above the market; and the

reason of this is plain. His comb-honey is always in tall boxes, and put up scrupulously neat and clean in no-drip shipping-cases such as he himself originated.

Although he is now quite well advanced in years, I think I never met one who is more enthusiastic about bees and bee-keeping than he. A charming conversationalist, he fairly bubbles over with ideas. When he is present at a convention I always regard it as a rare treat to meet him.

I have felt for some time that this prince of bee-keepers was not receiving the recognition that he really deserves, and that some of the inventions we now so highly prize, and the product of his genius should now be duly credited.

With all his other qualities the Captain is an exceedingly modest man — rather shrinking from notoriety, and yet perfectly willing to contribute and help to elevate the pursuit ; a busy man, he has no time to write letters ; for his extensive business, unless he kept a stenographer, would hardly permit him to do much in that line.—Editorial in *Gleanings*.

OUR LIBRARY TABLE.

There has been quite an accumulation of books for review on our table, most of them reprints or new editions of foreign works. We now notice some of the most important, so that our readers may know what is going on in bee literature of countries outside our own :—

"*Lettres inedites de François Huber pour faire suite aux 'Nouvelles Observations' ;" avec une introduction de Ed. Bertrand.* Published by the Revue International d'Apiculture, Nyon, Switzerland ; price, three francs.

Undoubtedly the most prominent bee-keeper of the present century was François Huber, and his "Nouvelles Observations sur les Abeilles" was one of the most marvellous works ever written on bees. M. Bertrand in his preface says, "If there are still any literary productions of the end of last century read, it is well known in what proportions. There is hardly one book in ten thousand that has resisted the trial of time. . . . And as regards works on science this proportion is very much smaller. Everything has changed, everything has been improved so rapidly, that a description of the ideas of a century ago, do not generally interest us. Of the immense number of scientific works there are only very few which are able still to instruct us, and these are nearly all works on natural history. Amongst these select few the 'Nouvelles Observations' of Huber sparkle with special splendour, made up of qualities so harmonious and original that one seeks for them elsewhere in vain." The first editions of Huber's "Observations" appeared in 1792, and the second in two volumes in 1814. It was this last which made the reputation of Huber, placed him in the front rank of scientific observers, and enables us at this time to look on him as the founder of modern apiculture. This book is a standard work at the present day, and it is surprising how few errors have been found in it, and when we recollect that Huber was blind and had to make all his observations through other eyes, the accuracy with which they were made is simply marvellous ! Anything coming from the pen of such a writer is specially interesting to every bee-keeper, it was therefore with pleasure that we published translations in 1891 of some letters which came into our possession when M. Bertrand and M. G. de Layens joined us in a tour amongst the bee-keepers at Ivray. In the B.B.J. for 1891, pages 172 and 196 will be found an account of how these letters came into our possession, and on page 547 the first of these letters appears. Since that time M. Bertrand had placed at his disposition by M. G. Motin, a grandson of F. Huber, about sixty other letters, which first appeared in the *Revue Internationale*, and have now been gathered into one volume. The letters are full of interest to bee-keepers, and contain much information about bees, They form a fitting sequel to "Nouvelles Observations," and bee-keepers are greatly indebted to M. Bertrand for having saved them from oblivion by publishing them in this compact volume.

The A.B.C. of Bee Culture. By A. I. Root. Revised by E. R. Root. Pub. by the A. I. Root Company, Medina, Ohio.

We are pleased to welcome a new edition of this well-known work. Its popularity can be estimated from the fact that this is the sixty-seventh thousand issued since the first came out in 1878. The original author has ceased to take an active part in the work of the apiary, but his mantle has fallen upon able shoulders in the person of his son, E. R. Root, who presents us with this revision. When it was first issued, Mr. A. I. Root decided to keep the type standing, so that the book could be printed as wanted, and any alterations made when errors were found. All new inventions could also be introduced into the work as soon as tested, for it is one of the first principles of the writers to submit every thing to a sufficient practical test in their apiary before embodying it in this book. Bee-keeping is making such rapid progress that books written five or six years ago even are quite out of date now ; however, it will be seen that special value attaches to a work of this sort that is so frequently gone through and corrected. This edition has been thoroughly revised by E. R. Root, and we might say it has been in great measure re-written. Amongst those articles that have been entirely recast are "Apiary," "Artificial Comb," "Comb Foundation," "Foul Brood," and many others. Then, in

addition, there are a number of new headings that have not appeared in former editions, amongst them being articles on "Anatomy of the Bee," "Apis Dorsata," "Chapman Honey Plant," "Contraction," "Frames to Manipulate," "Honey Adulteration," &c, and at the end of the book there are "Answers to Questions from Beginners." The book, like everything that emanates from the Root factory, is well executed, and it is one that should be in every bee-keeper's library. Those intending to go in for the examinations of the B.B.K.A. should possess and carefully study it, as being one of those books recommended by the Association. It can be obtained from the B.B.J. Office.

"*Ouchod zar Pasekoiu*." *By G. P. Kandratrif*. Published by A. F. Devrieu, St. Petersburg. Price 90 copeks.

This is a translation by M. Kandratrif of M. Ed. Bertrand's deservedly popular "Conduite du Ruches," and is from the eighth French edition. Bee-keeping is making steady progress in Russia, and bee-keepers there have a bee journal of their own, ably conducted by M. Kandratrif, who is not only an enthusiastic bee-keeper, but keeps himself well posted in all the modern methods.

The work before us is the second edition, and we have no doubt it will be welcomed by all progressive bee-keepers in Russia.

(*Continued next week.*)

Notices to Correspondents & Inquirers.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

C. A. Atchley (Willsbridge).—*Soft Bee Candy*.—Some persons succeed best with No. 2 recipe, others prefer No. 3; but either method will answer equally well if carefully carried out.

Bee Blossom (Norwood).—*Tilia Petiolaris as a Honey Source*.—1. Our correspondent may, we think, regard it as certain that no B.J. reader, so far, has had sufficient experience of the honey-yielding properties of the tree in question to give an opinion thereon as to its value. 2. The suggestion of holding an "International Show, Honey Fair, and Congress of Bee-keepers" next year sounds very nice on paper, but we fail to see the remotest chance of its getting beyond a "suggestion," unless our correspondent can see a way of raising a couple of hundred pounds or so wherewith to carry the scheme out.

West Kent (Tunbridge Wells).—*Honey Sample*.—The boney sent is certainly "fit for sale," but its quality is only very medium, the colour being poor and flavour rather coarse. It is from mixed sources.

R. Lindsay (Newton, N.B.).—*Bee by Post*.—As is usual with bees not well protected, the matchbox and queen were smashed quite flat in post. We can therefore only say the "remains" looked like those of a young queen, but as to "balling" we could not judge, under the circumstances.

H. J. S. (Hove, Sussex).—*Suspected Comb*.—It is more than probable that the bees have dwindled away through queenlessness. The few remains of brood—when under the microscope — showed slightly suspicious signs of disease, but not sufficient to warrant us in declaring it to be decided foul brood.

A Beginner (Abergele, N. Wales).—*Pollen in Store-combs*.—1. The substance in comb sent is pollen. Surely there can have been no queen-excluder between hive and surplus chamber where so much pollen was stored? 2. Where combs are half filled with pollen, they can only be rendered fit for honey storing by peeling carefully, or pulling off the pollen so as to leave only the midrib of the comb for the bees to rebuild upon. Otherwise, the only way of utilising the pollen-filled comb is to break it up small and set it in a strainer, let it stand under a running water tap till the pollen is washed out, then melt down for wax. 3. We should keep the honey in granulated condition till spring, and then convert it into bee-syrup by thinning down with hot water and bringing it to boiling point before medicating as proposed.

"Snow-queen" (Kidderminster).—*Dorset as a Honey County*.—1. We have no personal experience of either Sherborne or Dorchester as honey districts, but as a county, Dorsetshire stands well for honey producing. 2. If bees are working hard, hurrying in and out of entrances, and not having the pollen baskets on their hind legs laden with pellets of pollen, you may be sure their honey-sacs are well filled with nectar. 3. "Section cleaners" such as those referred to are only needed by those who deal with sections in thousands, as is common in America.

*** Referring to query 2293, page 417, we have had sent us the name and address of a bee-keeping correspondent (and will forward same on request) who kindly offers to assist "Mahi, Ealing," if he can be of any service.

Editorial, Notices, &c.

THE LATE-FLOWERING LIME.

Our Senior Editor writes from California, under date October 20:—"With regard to the controversy respecting the late-flowering lime, and the absence of an authoritative reply, I may say the answer is very simple. The fact is *Tilia petiolaris* has several synonyms, viz.: *Tilia alba pendula*, *Tilia Americana pendula* (of gardens), *Tilia argentea pendula*, &c. *Tilia petiolaris* means petiolate lime; flowers yellow-green, with fine petaloid scales inserted amongst the stamens. July. Leaves pale green above; white, hoary-pubescent beneath; petiole as long as, or longer than, the blade. Branchlets pendulous, leafy. Trunk erect; height full grown 50 ft. Native of the Crimea.

Alba pendula means white weeping.

Argentea (not *argenta*) means silvery.

Americana pendula means American weeping.

It is true many nurserymen do not know the difference; but there are plenty of good nurserymen who can be relied upon. Dicksons, of Chester, Veitch, Smith, of Worcester, all make a specialty of forest trees, I know.

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of October, 1899, was £1,672.—*From a return furnished to the* British Bee Journal *by the Statistical Office, H.M. Customs.*

SHOW AT ST. ALBANS.

The annual chrysanthemum show was held in the Drill Hall, St. Albans, on Wednesday and Thursday, November 8 and 9. In former years the proceeds of the show have been handed to the vicar and churchwardens of St. Peter's for the beautifying of the churchyard, but this year have been given to the Mayor's fund for the help of the relatives of our soldiers who fall in the present war. A capital display of chrysanthemums was shown, and about £70 raised for the fund above mentioned.

This year, for the first time, honey was exhibited; and although not a large sum was offered in prize money and not much honey shown, still considerable interest was taken in the exhibits by local bee-keepers, who seemed drawn to the spot where the honey stood as if by a magnet. Several expressed regret that they had not exhibited, and promised to make amends next year.

The first prize for both sections and run honey was taken by J. J. W. Rogers, St. Albans; the second in sections going to the Dowager Lady Limerick, of "Hawkswick; Mrs. W. Blow, St. Albans, taking second for extracted honey; and the third to Miss. C. Debenham, St. Albans. The honey, from a local point of view, was of good quality, Lady Limerick's sections not being of quite so good a colour as those taking first prize; Mrs. Blow's, in the run honey, being too pale and *seemingly* thin to please the eyes of the judges. The other honey shown was too dark for the show-bench. — *Communicated by* "Sainfoin," *St. Albans, November* 13.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

NOTES BY THE WAY.

[3819.] The month of November has so far sustained its tradition as being the "winnat month" of the ancients, nearly every day being rough and boisterous though mild. Our dahlias were still blooming on the 13th, also self-sown seed (this year's growth) of the cornflower and mignonette have grown and are in full bloom. The general mildness has, moreover, very much improved the grass leys, fields which were bare and barren at the end of the summer being wonderfully changed, and are now carpeted with a living green. Amongst the "stubble," too, some fields in which the crop of grass partly failed have had patches of trifolium sown and harrowed in; this also promises a happy hunting-ground for the bees another summer.

Our friends, Messrs. Lancelot Quayle and "D. M. M.," with others following closely on their heels, reporting big "takes" of honey, will accentuate the sage advice of Columella of ancient history, to locate the apiary in a valley, for it would appear that a "glen" is still the place in which to establish the bee-garden. We poor fellows who have chosen higher ground may strive and work and hope in vain, for let us manage "never so wisely," we shall never be able to chronicle anything like 200 lb. to 300 lb. from a single stock, and more especially from a new swarm. My customers in Scotland have had some fine takes from swarms sent from here in previous years, but Mr. "D. M. M." has put the "capstone" on the pinnacle. The record of good things accomplished should be an incentive to others to do likewise, but the one "fly in the ointment" is that these "big takes" get into publications which love to dwell on the sensational side of things, and these reach the ears of the "middleman," who very blandly informs you that

with such big returns the producer will no doubt accept a reduced price, &c. He then smilingly reminds us that, "we bee-keepers must be making a fine thing of it; that even 150 to 200 sixpences are not to be sneered at when got from a single hive." When such or similar arguments are used to the producer endeavouring to secure no more than a fair price for his honey, he may well ejaculate "save me from my friends."

Lace Edging.—Reverting to my "Notes" in B.J. of November 2 (page 432), the bottom par of first column refers to the "Royal" Show at Maidstone in June last, and the last par should read "When I have," &c. My grumble at the disqualification was (on the best evidence obtainable) that the prize went to an exhibit which exceeded the limit as much as those disqualified. "Fair play is a jewel," and I trust it will be a long time ere partiality in any shape or form influences the judges; let merit win, with quality always to the fore. As regards tasting the sections it was the general practice of judges in "the eighties" to do so, and I always considered it just to the exhibitor that if two or three exhibits were nearly equal in other points that the final decision should be awarded to flavour and consistency. If my memory serves me right it was allowed to fall into disuse because exhibitors grumbled that tasting comb-honey spoiled the sections for future shows. Then as to any difficulty in opening sections glazed with paper-edging, I well remember our Senior Editor's query when I staged the first sections glazed with strips of plain white paper, Mr. Cowan said: "How are judges to open them?" In answer, I simply passed my penknife round three sides of the section leaving one side as a hinge on which the glass swung, and after the judging, a small strip of gummed paper sufficed to make the honey secure. My opinion *re* fraudulent comb-honey is on a par with that of Mr. A. I. Root, whose offer of 1,000 dols. for the first complete machine or hand-made section of comb-honey has, I believe, never been claimed.

If we have any doubts about the purity of honey in the comb, will not the "pure foods Act," reach the producer and brand him as a rogue? Many statements have been made to the effect that comb-honey is not all genuine honey beginning with the "Wiley lie" as our American cousins term the most conspicuous instance, followed by what a certain canon said he saw of the matter in actual progress, but on close questioning was not able to locate the apiary. Broad hints have also been thrown out at shows by some who, by reason of their location, never get a really fine sample of honey and consequently jump to the conclusion that because others who live in good honey districts are more fortunate than themselves their produce must be spurious. These hints are generally levelled at exhibits of comb-honey, rarely at those of extracted, though many of the latter must be got from combs of pearly whiteness.

Honey Jars at Shows.—This question crops up frequently, but if the judges are adjudicating on the contents of a jar, an ounce either way cannot make any difference in the award. But if "A Derbyshire Bee-keeper" (3814, p. 437) buys a few cwts. of extracted honey, and puts it into his 17-oz. jars, I fear his profits will be bottled up with the honey, and invisible to himself. On the other hand, when the purchaser brings his own vessel, and asks for a pound of honey, he should get 16 oz; but when his order is for a jar of honey he gets a nominal 1-lb. jar at 10d., and the larger, or 17-oz. one, for 1s., thus paying 1s. per lb. for the odd ounces. I know a grocer who charged 1s. for the smaller jar, and 1s. 3d. for the larger, proving that Mr. Middleman is quite capable of taking care of his own interests.

Size of Jars in Trophy Class.—This is a point which I, along with every other exhibitor I have talked to on the subject (and I hope they will now support me), would like to see defined, and the sizes restricted to jars of the ordinary commercial sizes. The tendency at recent shows has been to stage various sized jars, holding from 1 oz. to 18 or 20 oz. Now while our Show Committee is so very particular on some other points I have already referred to, perhaps they will kindly turn their attention to this one, and say that only jars of the approximate weight of 1 lb. and ½ lb. are eligible; also, that the comb-honey must be in 1 lb. and 2 lb. sections, with the addition of flowers only in the Trophy Class. This, I think, would be a help to exhibitors in disposing of their trophies. I speak from experience. Buyers do not want sample jars of honey about their shop, neither do they want shallow frames of comb-honey; consequently, these have to be returned, and most of us know how railway companies charge full rate when it ought to be only half-rate return from Shows connected with agriculture.—W. Woodley, *Beedon, Newbury.*

NOTES ON THE DAIRY SHOW,

AND ON SHOWS IN GENERAL.

[3820.] I note that the Council of the B.B.K.A. at their meeting last week decided that the rule with reference to lace-edging or other ornamentation of sections of comb honey is to continue in force. This is to my mind the right course, and fair for one and all. In my opinion it is also best for all that even the best judges of apiarian produce should be responsible to some authority too, especially when officiating at such important exhibitions as the Dairy and "Royal" Shows. As evidence of what might be expected at these important shows, I may mention that at shows where there are no rules referring to these matters I have seen lace-edging extending three-quarters of an inch upon all sides of the sections in an

exhibit. I have also seen glazed cardboard cases, that were already edged with lace, containing sections separately decorated with paper-lace quite three-quarters of an inch in width. There are few, I think, of our judges of long, practical experience in handling comb-honey who cannot judge the source whence the contents of an exhibit of sections was gathered by the colour and general appearance of the comb; but where even the least doubt exists it should, of course, be cleared up by tasting. I remember once seeing some sections filled with syrup, and bearing in mind that experience, have no fear that I should pass over an exhibit of sections so filled at any time without detecting them. This being so, I don't think any of our best judges could be deceived in this way, seeing that syrup-filled sections have an appearance that is all their own.

With regard to another point that has been raised on the question of awards I cannot see how prizes for honey at a show can be regarded as awards for "good management," seeing that "management" has to do with the work of an apiary in the generally understood sense, as mentioned by Mr. Hooker at the recent Conversazione. If awards are to be made for good management, it will be necessary to visit the apiaries of those who make entries and take note of what the "good management" consists. A few years ago we used to have prizes awarded for the best kept apiaries in the county of Essex.

Upon the question of whether an exhibitor shall be able to take more than one prize in each class I think this custom should now be discontinued, but, on the other hand, some encouragement should be given to those who make a second exhibit to assist the show, by a separate reference to such exhibits.—W. LOVEDAY, *Hatfield Heath, Harlow, Essex.*

"JUDGING HONEY."

[3821.] Mr. Hammond in his letter (3809, p. 434) makes some very strong observations upon Mr. Hooker's statements to the effect that such admissions as were made by the latter gentleman are really placing "a premium upon dishonesty," and asks, "Why," among so many gentlemen of high integrity and standing as were at the conversazione, "such a statement was allowed to pass unchallenged and unrefuted?" A meeting lasting three hours has necessarily to be very briefly reported in such a small paper as the B.B J., but Mr. Hammond will—if he reads the report again—see that I immediately raised a protest against Mr. Hooker's statement, and explained my usual course of procedure when judging honey in sections (as stated on page 422). My practice is to select those which are likely to figure in the prize list, and to sample the contents before finally allocating the prizes, and I further illustrated the necessity for this by giving an instance where the prize sections at one of our most important shows some years ago were practically worthless, the honey having been contaminated by some foreign substance and the fact being overlooked through the judges not sampling the honey.

The argument that sections should not be damaged by cutting one of the dozen is a poor one because so little damage need be done, and, as Mr. Gordon remarks, the prize-cards should surely be of some service in directing purchasers to the best article. I am of opinion that the applause that greeted my remarks proved that my methods were acceptable to the great majority present, and I think Mr. Hammond need not fear the dishonest practices he suggests, as it will only be very poor judges who do their work in the slip-shod manner mentioned.

On another point I think if some suitable method is adopted to show the dividing line between light and dark honey classes, and the judges are instructed that colour is not to be the sole thing looked for—as too often appears to be the case—it seems to me that the schedule need not be burdened with another class for extracted honey; but I am certainly of opinion that more prizes, or prizes of greater value, should be given. For instance, in Class 69 this year the entry fees at the Dairy Show came to exactly twice the amount of prize-money given, and when one considers the great expense incurred in getting exhibits from such long distances, it seems questionable whether entry fees are not too high. One shilling entry for each exhibit would nearly have paid prize-money in some classes this year at the show in question, to say nothing of the larger number of exhibits that would be forthcoming with a smaller entry-fee.

A better position for the honey and attention to these matters will, I hope, enable the Dairy Show to maintain its reputation as the best show of "bee produce" in the kingdom.—A. G. PUGH, *Beech House, Beeston, Notts, November* 10.

IVY HONEY.

THE SEASON IN NORTH WALES.

[3822.] I am sending herewith a small sample of honey for your inspection. I may say you can rely on it to be from the ivy, as we have any amount of it about here, and had splendid weather in October, when it was in full bloom. On the 15th of that month I placed a frame, with foundation, in the middle of strong stock, all the other frames in the hive being at the time sealed to the bottom; therefore the bees were compelled to store all the honey they gathered in this frame. On October 30 I removed the newly-built frame of comb, and found in it about 12 oz. of honey, a portion of which was granulated hard when taken from the hive (there were also some eggs in it, although so late in the season, laid by an old queen). Although a bee-keeper for eighteen years, I never had a sample of honey regarding which I could say for certain

that it was from the ivy, and I think that we are apt to exaggerate the secretion of honey from this particular source, judging by my experience in this case. Just imagine, only 12 oz. from a strong stock in fifteen days of splendid weather; but I believe that the abundance of pollen the bees get from ivy is a great help for spring breeding, especially with driven bees fed on syrup.

We had a good season this year, especially on the heather, although the bees had only about fourteen days' work in it; but the good weather came just in the nick of time (rather early), when the hills were showing the plant in full bloom.

I have sold out all my sections, one firm taking 1,080 at a fairly good price. I have offered sections to this firm at 1s. 9d. per dozen, less unglazed (when I was busy with my bees), but they would not have them unglazed at any price. I am wintering 107 stocks, eighty-six of which are located at home and twenty-one in the country.—JNO. BERRY, *Llanrwst, N. Wales, November 7.*

"WORLD'S RECORDS"

IN HONEY GATHERING.

[3823.] In these days of "records" it would be interesting to know to whom the honour of having secured the greatest yield in the world of honey from a single colony belongs. It is now an established fact (at least, none have disputed it) that Mr. Lancelot Quayle, of this island, holds the "record" for Great Britain and Ireland.

Perhaps the Editor of *Gleanings* may have something in the way of a record to put forth. —PERCY WM. BROOKE, *Sulby, Lezayre, Isle of Man, November 8.*

[In view of the prodigious "takes" of honey recorded in some American bee-journals, our British "record" will look small by comparison. It would be interesting and valuable to have a reliable account of the largest return ever secured. We may, however, quote some particulars from an article in the current issue of the *American Bee Journal* just to hand, which opportunely supplies the information desired by our correspondent. Our limited space precludes anything beyond the insertion of a few extracts from the interesting and very full details in our contemporary, in which are tabulated returns covering large areas and extending over nearly twenty years. The highest average returns are reported from Australia, where we learn that an Australian bee-keeper in 1892 secured an average yield of 750 lb. from sixty-three colonies, besides increasing the number of his stocks to 120. Another Australian, reporting on the "takes" of honey from single hives, says:—"In 1895 one colony gave me 1,250 lb., another 1,200, and several others averaged 1,000 lb.!" Our contemporary adds:—"It must be remembered that in Australia bees gather honey almost the whole year, that is, if the season be good, which is not always the case, for the same man says, that in 1894, he had only about 75 lb. per colony."

Nothing approaching the above has been secured in America, but the returns on that vast continent are almost phenomenal compared with ours. According to the reports before us Dr. Gallup, in Iowa, secured 750 lb. from a single stock, followed by 700 lb. by Mr. Snyder, in Wisconsin in 1889. Next comes Mr. Doolittle (well-known to our readers) with 566 lb. in the year 1877. In Arizona, Mr. Gregg secured the enormous average of 485 lb. from 200 stocks. This has, perhaps, never been excelled in America, for when the question was asked in *Gleanings*, "What do you consiner an average crop for the last twenty-five years?" Mr. Doolittle's average was given as only 80 lb.—EDS.]

DARK HONEY AT THE DAIRY SHOW.

[3824] As one who was present at the late Dairy Show, and thus among those invited to send on to the B.J. any "impressions" formed on the occasion, I take leave to say that I differ in opinion from Mr. Seymour, so far as his statement in your pages (3813, page 436) regarding what he calls "honest dark honey" which "contained no heather." If I am not very much mistaken, the second prize lot of dark honey did contain some from heather. I believe there are others who hold the same opinion. Not being an exhibitor, it did not affect me, but perhaps the exhibitor who staged the honey referred to (No. 1,454 in Dairy Show catalogue) will tell us if I am right or not?—H. SAYERS, JUN., *Chessington, November 11.*

ANOTHER LATE-FLOWERING LIME.

[3825.] Referring to the late-flowering lime, which was discussed at the recent Conversazione, I may say that while travelling last year in Northern Italy with Mons. H. De Beukleurs, Chief of the Botanical Gardens of Antwerp, we constantly found trees of a late-flowering lime, the flowers of which appeared in such profusion as to cover the whole tree and quite hide the leaves. Upon closer examination, however, I found the leaf to be a small heart-shaped one growing on a yellowish twig. Needless to say, the cheerful hum of bees working overhead was heard very distinctly. Upon inquiry, I was told that the name of the variety is *Tilia microphylla.* It is not generally grown in this country, but Messrs. H. Merryweather, of Southwell, Notts., can supply it. *T. petiolaris* appears to be fairly well known in this country as a late-flowering lime. I am trying both sorts of the above named trees, but I am afraid it will be some time before I can tell you which are the best as honey producers. — E. H. TAYLOR, *Welwyn, Herts, November 4.*

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

While free from pretensions so far as regards regularity of arrangement, Mr. North's apiary, shown below, commends itself as a practically convenient workshop for bees and bee-keeper. Of himself he writes :—

"I started bee-keeping in 1867, thirty-two years ago (when in my teens), with two casts purchased from an old friend of mine, who was considered a great authority on bees in the district in which I lived. He gave me a good idea of the management of straw skeps, during our acquaintance lasting about twelve years. I then gave bee-keeping up for a time, owing to business needs, combined with some heavy bee losses. We used to cart the hives to the moors, about five miles, every August, and I lost thirty-one stocks one year owing to bad weather. It was a good swarming season, but so wet and cold after that I had to feed the bees to get them to the moors, but they perished there.

"Several years ago I resumed my bee-keeping, by purchasing four skep-hives at a sale and transferred them to frame-hives, of which I have now twenty-four. Of these four are the "Wells," and all the rest single hives. About half of them are the "W.B.C.," which I like by far the best, and find my bees winter better and come out stronger in spring in that style of hive.

"I am located in a fairly good district, with plenty of white clover and heather within one mile. Last year I got about 70 lb. from my best single hive, and had a fairly good season for honey; though some of it was dark in colour, the bulk, however, was very good. I go in for both extracted and comb honey. I have five stocks of Italians (each headed by a last year's queen) and four colonies of hybrids. I find the latter are bad-tempered bees, but good defenders of their hives, and I like them very much in other respects, therefore intend to increase them during the present season.

"The photo shows my bee-garden at back of house. I have in all twenty-one stocks, thirteen singles, and four "Wells," along with a few hives in front of the house, with plenty of room for more if I wish to increase the number of my stocks. The apiary has a south-south-east aspect, and is moderately sheltered from the west, north, and north-west winds.

"I use full sheets of foundation in my brood-chambers, also in all shallow-frames for extracting, and find the bees will store as much honey in frames so fitted as they do when supplied with drawn-out combs, of which I used to keep all I possibly could. Now, however, I am not very particular about preserving store-combs, and, consequently, if they are not specially nice and straight I put them in the melting-pot. In conclusion, let me add that I make all my own hives, &c., which are fitted with frames of the standard size."

MR. R. NORTH'S APIARY, KIRKBY LONSDALE, WESTMORELAND.

METEOROLOGICAL

OBSERVATIONS TAKEN AT KETTON, STAMFORD, RUTLAND, FOR THE WEEK ENDING NOV. 11, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.	Wind.
Nov. 5..	29·59	53·8	56	49	7	52·5	·20	SW
,, 6..	29·76	46·5	53	45	8	49·0	—	S
,, 7..	29·92	47·0	55	39	16	47·0	·21	S
,, 8..	29·25	49·2	54	47	7	50·5	—	SW
,, 9..	29·71	48·2	54	44	10	49·0	·15	W
,, 10..	29·34	53·5	60	44	16	52·0	—	S
,, 11..	29·84	50·0	55	42	13	48·5	·02	SW
Means ..	29·63	49·7	55·3	44·3	11 0	49·8	·58*	—

* Total, ·58 in.

Mean vapour tension, 0·299 in.; mean relative humidity, 83 per cent.; mean temp. of the dew point, 44°·6. The rainfall, viz., ·58 in., = 13,121·34 gallons, or 58·58 tons to the acre, or 2 90 lb. to the square foot. For the week ending November 4 the mean temp., viz., 50°·9 (not 50°·8 as sent in error), was + 6°·8, and the rainfall, viz., 1·17 in., was + ·57 in. The mean temp., October 22 to November 4, viz., 50°·4, is +5°·6, and the rainfall, viz., 2·12 in., is + ·91 in.

FRED. COVENTRY.

The Vale, Ketton, Stamford, November 12.

Queries and Replies.

[2299.] *Hive of Bees Stolen.* — It has occurred to me to enquire whether you have ever heard of any one having their bee-hives, containing bees, stolen? During the night, or rather between the hours of 5 p.m. on Saturday and 11 a.m. on Sunday, the 29th ult. I had one of my five stocks carried off by thieves, and unfortunately for me the marauders have chosen the heaviest and best working stock in the lot. It seems to me very queer for such a ticklish thing as a stock of live bees to be walked off in this way, everything belonging to the colony in question being taken, hive-stand included, evidently with the full intention of setting up bee-keeping. On making enquiries I find that a gardener had a skep stolen about a month ago but he made no stir about it. I have put the matter into the hands of the police and have also fixed up an empty hive on the place where the "missing" one stood (in case a few bees might get out and fly back). as it would then show they were not far away, but no such luck. I'm afraid my bees are gone, however much they may be to "memory dear." —WALTER CROSBIE, *The Chestnuts, Lyonsdown, New Barnet, November* 9.

REPLY.—Though by no means a frequent occurrence, cases of bee-stealing are now and then heard of; but we may say with certainty that thefts of that kind are not on the increase. Moreover, it is equally safe to say that the "criminal classes" will not make the "burgling" of apiaries a branch of the "profession" for very obvious reasons.

[2300.] *Preparing Bees for Wintering.*—I have a swarm of bees in a bar-frame hive, and have given them 15 lb. of sugar made into syrup, as per No. 7 recipe in "Guide Book," but accidentally put half an oz. too much salt. 1. Will this hurt the bees, and is above quantity enough for them to winter on? 2. How long will naphthol beta, when mixed keep good? 3. Is it usual for bees this time of year when fine to be very active, as mine are? 4. Is this a good time of year to remove bees 400 yards, and will it do harm to take frames and bees out of one hive and transfer to another at this season? 5. How often ought combs to be renewed in brood-chamber? I have heard of them being left for years.—NOVICE, *Penn, Amersham, November* 11.

REPLY.—1. An extra half oz. of salt will do no harm in that quantity of syrup-food, which amount will suffice for winter stores. 2. If kept corked the solution will keep for any length of time. 3. Quite usual when being fed. 4. Better defer moving until bees have been confined indoors for several weeks by frost. 5. It is good practice to renew two or three combs every year.

[2301.] *Beginning Bee-keeping.*—At the outset let me say that I am quite an amateur as regards bee-keeping, and that I this morning received a copy of the "British Bee-keepers' Guide Book," and hope through it to develop into a first-class hand at the craft in course of time. From the chapter on "wintering" bees I have got some very valuable information, but would like another word or two of advice. My only stock of bees so far is in a hive known as the "Sandringham," sent me about a month ago by my brother. The outer case or roof part lies close down over the body of the hive, as in fig. 18 in "Guide Book" (page 42); but I have placed it inside a large box made for the purpose of keeping the cold winds off. Being advised to commence feeding the bees on their arrival, I gave them some rather thick syrup given in a feeder I bought. The bees carried down the food readily until this week, when they seem to have taken little or none. After reading the article on "Wintering" I examined the bees so far as raising the quilt, and to my inexperienced eye there seemed to be a lot of honey. I also think it is a fairly strong stock—at least, there seems to be a lot of bees in. 1. Shall I now make some candy from recipe 2, 3, or 4, and put beneath the quilt so as to give them a passage over the frames? 2. I have taken steps to keep the bees warm by using plenty of new wool-packing above the frames; and the space

between the hive itself and the large box referred to is packed with old blankets and wrappers. Is this right? In conclusion I should add, when I first got my hive home some stranger bees commenced to rob them, so I reduced the width of entrance to about an inch. 3. Shall I now widen it?—BEE, *Whitfield, Northumberland, November* 11.

REPLY.—1. All depends on the quantity of food there is in the hive. For the rest, the instructions on "Wintering" in "Guide Book" contain all the information you ask for. 2. Yes. 3. About 2 to 3 in. is a suitable width for entrance under the conditions under which your bees are being packed for winter.

[2302.] *Bees in Skeps short of Winter Stores.*—I bought four stocks of bees in skeps at the beginning of June last; two were swarms and the other two the parent stocks from whence the swarms came. Not being in a position at the time to buy four frame-hives, as was my intention, I thought I would let the bees gather what honey they could this year and keep all their stores for winter food, then allow them to swarm again next summer and put swarms into frame-hives procured in the meantime. Three weeks ago, however, I bought a copy of Mr. Cowan's "Guide Book." I find it treats chiefly on the methods of using modern frame-hives. Feeling a bit uneasy as to safe wintering I have just asked a friend when my bees would be likely to want food, and was told that I ought to have fed them weeks ago. My friend, however, has not seen the hives, as he lives some distance away, so I endeavoured to ascertain for myself what was the actual condition of the bees. To-day I examined one skep by slightly raising it on one side, and, as far as I could see, there was only empty comb, so I gave the hive a smart tap but only two bees came to the entrance. I did not turn up the hive completely to examine further as it was very cold and windy. A few lines of instruction what to do in the way of feeding and wintering bees in skeps will be esteemed a favour, as I do not understand skep management at all. When I get the bees into frame-hives I shall be more at home, having three bar-frame hives to see to belonging to my employer, and can manipulate without fear.—GEORGE DAY, *Tamworth, November* 8.

REPLY.—Before we can offer advice likely to be of real use, some idea should be given as to the amount of stores now in the skeps. After so good a season as this, very little, if any, additional food may be needed. Nor does it require any skill to find out, beyond gently raising each skep in the hands and roughly judging as to its weight. If it approximates 25 lb., the bees may be regarded as fairly safe so far as winter food is concerned. Otherwise, they will need a plentiful supply of soft candy at once, given through feed-hole at top.

SEASONABLE QUESTIONS.

CARING FOR COMB HONEY.

Question.—Please tell us in your department in *Gleanings* if it will answer to take comb honey from the hive before all the cells are sealed up along the edges of the combs next the wood, and, if so, how is this unsealed honey prevented from running out of the cells in handling and during shipment? Also tell us something about moth-worms, or the larvæ of the wax-moth on comb honey in sections, and how they can be got rid of.

Answer.—I doubt whether there ever was a season since I have written about bees when I had so many inquiries about moth-worms and the care of comb honey as now; and from the letters received it would seem that, owing to the poor season, the larvæ of the wax-moth have been concentrated on the little obtained, thus being noticed more than in seasons of plenty. But, to the question:

The first requisite for caring for comb honey after taking it from the hives is a good warm room in which to store it. I use a room 7 ft. by 10 ft., in the south-west corner of my shop, having the outside painted a dark colour, so that the rays of the midday and afternoon sun will make it as warm as possible. Some use an upstairs room, which is still better, and which will generally be warm enough without any pains being taken with it, especially if this room is under the south roof of the building, with no partition between the roof and the room. The only objection that can be brought against such an upper room is the amount of heavy work required in lugging the honey up and down the stairs. Where an elevator can be used, it is just the thing. As a body of honey once thoroughly warmed will hold the heat for a long time, the average temperature of such a room will be pretty high, ranging from 80 deg. to 100 deg. most of the time, thus ripening the honey splendidly. The object of this is to have the honey growing better and better, instead of poorer, from the moment it leaves the hives, and have the honey in those unsealed cells, where there happens to be any, around the outside of the section next to the wood (which is spoken of above) grow so thick that it will equal any in the section. Ofttimes it is better not to wait until these unsealed cells next the wood of the sections are *all* sealed over, as to wait for them to be so is often a great waste of time, especially for those near the outside of the surplus arrangement. When the honey is taken from the hive, that in the unsealed cells is so thin that if the sections are held so the mouths of the cells are down, it will leak or run out badly; but by leaving it in a warm room as above for three weeks or a month it can be handled as you please, tipping it over, &c., and not a drop of honey can be shaken out; and, if after it gets to market, it is stored in a damp, cool place, it will be some time before it will take on moisture enough to affect it to any great

extent. Perhaps all will not agree with me; but I think that all comb honey should be stored in such a room at least a month before crating or sending to market, to ripen, or "sweat out," as it is most usually termed. I know that it is a saving of time and labour to crate it at once; but I think it pays for all of this extra time and labour, in the better quality and appearance of our product.

Having the honey placed in a warm room, the next thing that will need our attention will likely be the larvæ of the wax-moth, as spoken of by our questioner. After the honey has been away from the bees for about ten days, where placed in a warm room as is here given, if we inspect the cappings of the honey closely we can detect little places of white dust, resembling flour, upon the surface of the comb, and usually most abundant near the bottom of the section. Although this part resembling flour may not be larger around than a fine needle, still it tells us for certain that a tiny worm of the wax-moth is there, and that, unless its death comes about in some way, while in this tiny state, it will destroy more or less of the nice white comb which encases the honey. While in one of our cities a number of years ago I saw sections of honey which had worms on them from ¾ in. to 1¼ in. long, and nearly as large around as a slate pencil, which had nearly denuded the honey of its nice white capping, thus making it an object of loathing rather than of attraction. This was caused by the producer not knowing how to detect the first appearance of the worms, or being too shiftless to kill them after he had found them; or, perhaps, being in too big a hurry to rush his honey to market, instead of ripening it as advised above.

If, after several examinations, you fail to find such little white flour-like places, you may well be glad, for it is no small task to keep the worms from honey during the latter part of the summer and fall, where they are as plentiful as they were in this locality twenty to thirty years ago.

If you should find these flour-like places, the next thing is to sulphur the honey. To do this best, the honey should be stored on a platform raised a foot or more from the floor, and built of narrow scantling so placed as to form a sort of open net-work, this allowing the fumes from the sulphur to freely circulate all through the honey piled on the same. Having all in readiness, put some ashes in an old kettle, so that there will be no danger from fire resulting from the heat from the coals which are to be placed therein. Take the kettle of coals to the room, and pour sulphur which has been previously weighed) on the coals, to the amount of ¼ lb. to every 75 cubic feet contained in the room, when the kettle is pushed under the pile of honey, and the room closed. Leave it thus closed for from twelve to fifteen minutes, when it should be opened to let the smoke out, for if allowed to settle on the combs it will give them a greenish tint.

Just how the eggs get into the surplus apartment of the hives is not known; but it is supposed they are carried there on the feet of the bees. All combs having pollen in them are more subject to the moth than are those having no pollen in them; therefore those sections having any pollen in them should be kept separate from the main crop of honey. If more honey is put into the room later on, each lot so put in should be sulphured in about a week or ten days after putting in.

Only as we put our honey upon the market in the best possible shape can we expect to secure the highest prices for it, or expect that the price will be kept at paying figures; and the person who knows how to put his honey on the market in the most marketable shape will not be the one to bring down the market price by underselling his neighbour, either, as do those who pay no attention to this matter. —G. M. DOOLITTLE, in *Gleanings* (American).

ARE BEES A NUISANCE?

A case came before Judge Owen, at Cardiff County Court on Friday, October 6, when Juan Cascago, ship broker, Valladolid, Radyr, brought an action against Benjamin Davies, clerk, Coedwyn, Radyr, claiming £20 damages, and also asking for an injunction to restrain the defendant from keeping bees. Mr. Sankey appeared for the defendant. The plaintiff was not represented by counsel.

On the case being called on, Mr. Sankey stated that the matter had been settled by his client consenting to an injunction against his keeping bees so as to be a nuisance.

The judge, however, demurred to making such an injunction, remarking "How can I enforce it?"

The following account of the subsequent proceedings are copied from the *Western Mail* of October 7.

Mr. Sankey: There has been a case in point decided recently.

His Honour: Where was that?

Mr. Sankey: At Bath.

His Honour: And the judge there is an older man than I am.

Mr. Sankey: The defendant is prepared to consent to an injunction for what it is worth, but he does not think it is worth the paper it is written upon.

His Honour: I never heard such an absurd thing. How can bees be a nuisance? I might be called upon to enforce the injunction, and then how could I do it?

Mr. Sankey: Well, the defendant does not object.

His Honour: No, but an injunction is a serious matter. I will adjourn the case for a month, and in that time you must come to some agreement so that this may be dismissed.

Mr. Sankey: Well, my client has consented to an injunction.

His Honour: Yes, but it must go further than that. Who is for the other side?

Mr. Sankey: My learned friend Mr. Bailhache, I think.

His Honour: I'm not surprised that he is not here in such a case. How can bees be a nuisance?

Mr. Sankey: That, of course, is a question of fact.

His Honour: Before I can grant an injunction the nuisance must be established. I adjourn the case for a month.

The sequel to the above reads as follows:—

A peculiar situation occurred when the case of Juan Cascajo *v.* Benjamin Davies, of Radyr, was called up. It was adjourned from the last court, and was an application for an injunction against the defendant restraining him from keeping bees so as to be a nuisance. The advocates engaged were Mr. Bailhache for the applicant and Mr. Sankey for the defence. Mr. Bailhache, however, did not rise to the call.

His Honour: Well, Mr. Bailhache?

Mr. Bailhache: I understood that your honour expressed an opinion at the last court, and we did not propose to go further with it.

His Honour: Oh, no. What I said was that I must have evidence as to how bees can be a nuisance. How are you going to earmark this man's bees so that you may enforce an injunction? (Laughter.)

Mr. Sankey: Well, we have said that we would agree to the injunction if they can get it.

Mr. Bailhache: We don't press the action any further. I think there was an agreement between the parties.

His Honour: What was the agreement?

Mr. Sankey: We simply said that if there was an injunction we should not object to it.

His Honour: Don't you think that as these parties are neighbours the matter had better drop?

Mr. Sankey: Yes, your honour.

Mr. Bailhache: There was an agreement signed under which Mr. Sankey's client agreed to pay £1 and to submit to an injunction. We do not propose to go any further with the case, but if Mr. Sankey thinks he is entitled to take any further step he must take it.

Mr. Sankey: We think that the case having come into court, his honour ought to make some order.

His Honour: Well, suppose I give judgment for the defendant without costs? If I don't do that I must strike the case out. I think I had better give judgment for defendant.

Mr. Sankey: Without costs. Very well, your honour.

Mr. Bailhache: It seems to me that that is the only thing to be done.

His Honour thereupon made an order accordingly.—*Cardiff Evening Express, Nov.* 3.

OUR LIBRARY TABLE.

(*Continued from page* 448.)

The Honey Bee: A Key to the Word of God. By R. F. Holtermann, Brantford, Canada, formerly Lecturer in Bee-keeping, Ontario Agricultural College, Guelph. Published by the author at Brantford. Price 10 cents.

In this sixteen-page pamphlet the author makes use of the bee for the purpose of illustrating the facts he wishes to bring out in expounding the Gospel. He says that the thoughts on the subject came to him in a remarkable way. For some eighteen years he had been connected with bee-keeping, during which time he was a Bible student. In answer to the promptings of God's spirit he decided to devote all his time to preaching the Gospel, and, with this object in view, he severed his connection with the Brantford City Council, resigned his position as lecturer in bee-keeping at the Ontario Agricultural College, and as manager and stockholder of Messrs. Gould, Shapley, & Co, a large business connected with bee keeping, and laid aside all other business to carry on God's work. Within three days after taking this step he saw that the bee might be used as an illustration to lead us to a better understanding of the Gospel—and this pamphlet is the result.

The concluding words of the preface read as follows:—"Although the divinity of Christ and the inspiration of the word of God are denied on every hand, God is surely confirming the word by giving a better understanding of His works, and in them showing us His control and guidance. If we wonder at and admire the beauty of the illustration (the natural history of the bee), need we marvel that the reality is beyond the comprehension of the natural mind."

The bee has frequently been used by preachers for illustration, and so long ago as 1657 the Rev. Samuel Purchas, of Sutton, Essex, who published a book on bees, entitled "A Theatre of Politicall Flying-Insects," devoted the whole of the second part, consisting of 132 pages, to "Meditations and Observations, Theological and Morall, upon the Nature of Bees." This consists of 100 articles illustrating as many different portions of the Bible.

Many of Mr. Holtermann's illustrations are aptly chosen, and we heartily wish him God speed in his work.

L'Apriculture par les Méthodes Simples. By R. Hommell. Pub. G. Carré et C. Naud, Paris.

The writing of books on bees can easily be overdone, and we look in vain for the want that the book before us is intended to supply. As its name implies, the author is an advocate of simplicity, which he frequently pushes to the extreme of negligence. He is a disciple of M. de Layens, but rides his hobby far

harder than that well-known bee-keeper ever did. It was very natural for Layens to advocate the hive that he devised, but he never did so to the exclusion of others. M. Hommell, however, condemns the hive used by 999 out of 1,000 successful honey producers, and, according to his idea, the horizontal hive of Layens is the ideal one, and all others are unfit to use, and "are incomparably more difficult to manage than this." He tells us that in a state of nature bees construct combs sometimes a metre long, and have placed their store of honey over the brood-nest, and yet he objects to those who carry out this principle in storifying, and himself compels his bees to store in side combs furthest away from the entrance. His reasoning is frequently weak and faulty, and his calculations misleading. The book, although well printed and filled with illustrations taken from Layens and Bonniers's "Cours Complet d'Apiculture" and other books, contains a large amount of superfluous matter of little interest to the practical bee-keeper. More especially is this the case in respect to the theoretical part, which is verbosely spread out. On page 50 we have a reproduction of the hind legs of bees taken from Emile Blanchard's work on the metamorphoses of insects, and failing to note this author's mistake, has perpetuated it by calling the drone leg the queen leg and *vice versâ*. M. Hommell describes the small black bees, and although we know from Cheshire's observations, some fifteen years ago, that they are affected by a disease due to a microbe, to which he gave the name of *Bacillus Gaytoni*, M. Hommell considers them "as a particular species, whose rôle, yet unknown, requires anatomical and physiological researches." Twenty-three pages, at the end of the book, are taken up with honey and wax statistics; eight pages containing tables of the various adulterants of bees-wax, and showing how the adulterations are carried out, which we do not think ought to find a place in a manual of bee-keeping. With such practical books as Bertrand's "Conduite du Rucher," Layen's and Bonnier's "Cours Complet d'Apiculture," and Hamet and Saralle's "Cours Pratique d'Apiculture," the whole field, embracing all the systems, is so ably covered, that there was really no need for the work before us.

Notice sur George de Layens (1834-1897), with preface by Gaston Bonnier, pub. Ed. Crété, Corbeil, France. This is a collection of articles that have appeared in various bee papers respecting that well-known French bee-keeper, George de Layens. They have been carefully compiled by his cousin and fellow-worker Gaston Bonnier, the well-known botanist. We find that M. de Layens belonged to an old and honourable family in Lille, where he was born in 1834. On leaving college he studied mechanics, and in 1862 he attended a course of lectures on bee-keeping, given by M. Hamet, in the Luxembourg gardens. This was the commencement of M. de Layen's bee career, and it was not long before he became a proficient bee-master. Being of independent means, he was able to devote his time to his favourite occupation, and carry on experiments and observations which many have not the opportunity or ability of doing. Every one should read this compilation, as it will give a good idea of not only the man but of his work in apiculture. Bee-keepers are indebted to M. Bonnier for putting these articles together in so concise a form.

(*Concluded next week.*)

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

EDGAR FROWD (Liss, Hants).—*Variety of Bees.*—The bees sent are hybrid carniolans; probably second cross with blacks.

ARTHUR PEAKE (Derby).—*Badly Provided Stocks.*—Syrup-food is unsuitable at this season. If combs of sealed food are not available, the best substitute is well-made soft-candy.

O. C. GRIFFITH (Abergele).—*Books on Bee-Keeping.*—Apart from the books you already possess, we might name Cheshire's "Bees and Bee-Keeping" and the "A B C of Bee-Culture" (American).

E. WARRAN (Tavistock).—*Source of Honey.*—The sample of honey received is not only "fit for sale," but is of excellent quality. The "peculiar flavour," which you seem to regard with suspicion, is, to our mind, its chief merit, being from heather bloom.

QUERIST (Hants).—*Dealing with Foul Brood.*—Mr. Jno. Berry's method of dealing with foul brood—to which you refer—appeared in B.J. of August 25 last year. It may be had from the office for three-halfpence in stamps.

JOHN KIBBLE (Charlbury).—*Record "Takes."*—Beyond the full and precise details given on page 432 by our correspondent, "D. M. M.," we can only add that the method followed by Mr. Lancelot Quayle in securing his record for 1897 is very fully described in our issue of October 21 in that year.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

APPRENTICES WANTED.—Two in Nursery, for greenhouses and floral decorating work; also Two for Seed and Bulb Depôt, including work in the apiary among the bees and bee-keeping appliances, under expert bee-master.—Apply, SMITH'S SEED AND BULB DEPOT, Oxton, Birkenhead. 605

WANTED, a Treadle and Hand Circular Saw for hive making. SPEARMAN, Colesbourne, Andoversford.

THREE DOZEN 1-lb. SECTIONS pure HEATHER HONEY, 25s.; 9s. doz. RANDAL, Pickering. 602.

Editorial, Notices, &c.

SHOW AT FARNHAM.

The annual show in connection with the Farnham Cottagers' Society took place in the Corn Exchange on the 20th ult. The patron of the Society is the Lord Bishop of Winchester, and the president the Rector (the Rev. T. G. Gardiner). There is an influential list of vice-presidents and committee. The secretarial duties were ably and courteously discharged by Mr. J. W. Lewis.

The show was well attended, and in point of quality it was also a success.

The show of honey was also a great success, there being close upon sixty entries against thirty-seven last year.

The exhibits were well staged and of excellent quality. The judges were Mr. F. B. White, Hon. Sec. Surrey Bee-keepers' Association, and Mr. W. F. Reid, Addlestone, one of the Association's honorary experts, the following being their awards :—

COTTAGERS' CLASSES.

Six 1-lb. Sections.—1st, W. Brant; 2nd, G. R. James.

Super Skep of Honey.—1st, C. Winslade; 2nd, A. Brockhurst.

Four 1-lb. Jars Extracted Honey.—1st, J. R. James; 2nd, W. Brant; 3rd, G. Winslade; h.c, G. R. Cox.

MEMBERS S.B.K.A. ONLY.

Eight 1-lb. Sections.—1st, W. W. Drewitt; 2nd, W. Littlejohn; 3rd, C. H. Keable; h.c., G. Langrish.

Four 1-lb. Sections.—1st, W. W. Drewitt; 2nd, W. Littlejohn; 3rd, E. Clapshaw; c., A. C. Biles.

Eight 1-lb. Jars Extracted Honey.—1st, G. Langrish; 2nd, J. White Lewis; 3rd, Miss Bacon; c., R. Beale.

Four 1-lb. Jars Extracted Honey.—1st, R. Beale; 2nd, G. Langrish; 3rd, J. White Lewis; h.c., C. Winslade.

Collection of Bee Appliances.—1st, C. T. Overton; 2nd, M. & J. Tily.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

SIZE OF JARS IN TROPHY CLASS.

[3826.] I notice that our friend Mr. Woodley, in referring to the "Trophy Class" at the late Dairy Show, in last par of his "Notes," on page 450, objects to "various sized jars, holding from 1 oz. to 18 oz. or 20 oz.," and would like to restrict the jars staged to those of the ordinary ½-lb. and 1-lb. size.

Now, as a frequent exhibitor myself, I contend that if we are to encourage or help on our sales of honey to the great mass of the people, and especially for the poorer classes, it is essential that honey should be put before them in all its saleable forms. This being so, I strongly hold the opinion that jars holding from 1 oz. to 20 oz. and upwards should be staged, if the exhibitor sees fit, to show how he develops his own trade by putting it up so. Indeed, I hope to see the "good time coming" when we can sell honey in tins or jars for twopence, or even less.

I, as a commercial man, want to cater for the masses in disposing of my products, and, as a fact, I can tell friend Woodley that my small jars staged at the Dairy Show were all disposed of before I sold the 1-lb jars. The buyers, too, told me they were very pleased at the introduction of same. I note also that Mr. W. objects to shallow-frames and 2-lb sections. Now, if there is one thing that, as a bee-keeper, I like to see, it is a good exhibit of "comb-honey" in any form, and the one shallow-frame of honey staged on Mr. Woodley's display at Dairy Show was to my mind the acme of perfection. The 2-lb. sections on Mr. Seymour's trophy were also first-rate.

Speaking as exhibitor and for myself, I hope when the "Royal" Show schedule for next year is issued we shall not see any new departure to the effect that only ½-lb. and 1-lb. jars are allowed in the Trophy Class. I do not write this in any unfriendly opposition to Mr. Woodley, but it seems about time this size of jar question for exhibition purposes was thrashed out. I believe I was the first to introduce the tall tie-over jar, which secured me a prize at the Dairy Show some five years ago. An objection was then raised, and that class of jar was in consequence discarded, notwithstanding the fact that so many admired them. I have, however, no fear that the small tie-over jars will meet with the same fate; they sell too readily for any chance of them falling into disuse, as shopkeepers will find out eventually. —R. Brown, *Somersham, Hunts, November* 20.

"CONTAMINATED" HONEY.

[3827.] An instance is given by Mr. Pugh in his letter on "judging honey" last week (3821, p. 451) of prize sections, the contents of which was not tasted by the judges, being "practically worthless through contamination by some foreign substance."

This year I had a small parcel of honey (about 6 lb.), "contaminated" in consequence of the bees working on the flowers of onions grown for seed. This was the most disagreeable of any honey that I have tasted. I once had quite a quantity of honey gathered from the wild rose (there are two kinds of wild

rose in this and some other districts). This honey was so strongly flavoured of rose as to be all but worthless.—W. LOVEDAY, *Hatfield Heath, Harlow, Essex, November* 20.

May I through the B.B.J. be allowed to thank Mr. Tiller, of Wood Green, for a letter received from him, the address given being insufficient for my reply to find him.—W. L.

MY REPORT FOR 1899.

[3828.] After long delay, and in response to your request on page 324 of B.B.J. of August 17, I now send on my report for 1899. The season opened with a poor prospect, but turned out well; in fact, July was the best month for honey in my past experience. I am unable to give the average weight of surplus yielded per stock, as, owing to the quantity of honey dealt with, I have had to put it up in many different-sized jars, holding from 4 oz. to 8 or 9 lb. each. On reckoning up my sales for the year, I find that, up to November 16, I have sold 490 lb., and used up at home about 150 lb. Of the latter nearly 80 lbs. were consumed in making mead, now undergoing fermentation in process of "brewing," and which I hope will equal my first-prize sample at Shrewsbury Show. The rest of surplus honey is on sale.

My twenty-seven stocks also yielded about twenty swarms; in one instance, I joined three of these together, in another case two. I can tell you that these united swarms gave a good account of themselves. But the most remarkable thing of the past summer has been the very few wasps about. I never remember such a small number being seen before.—JOHN BRADLEY, *Stretton, Yockleton, Salop, Nov.* 17.

BEE-KEEPING IN CO. DONEGAL.

[3829.] Perhaps some of your readers may be a little interested in the following details respecting our bee-doings up here in co. Donegal. To begin, then, let me say that from ten stocks of bees (winter count) I have this year taken fully half a ton of surplus comb-honey, almost all in sections. This is apart from the returns arising from the sale of queens and swarms, to say nothing of additions to our stocks. The above shows an average of 1 cwt. of honey per hive. Of course, some stocks gather a great deal more than others, varying according to their respective conditions. I attribute the above good "takes" to judicious management and strict attention to the keeping of young and selected queens. Most of my colonies consist of either cross-bred strains between our native black bees and Italian or pure Ligurian bees. Being a queen-rearer, I take special care in obtaining my queens from the most suitable stocks, thereby improving the strain year after year. Next year I intend trying to improve them still further, as a friend of mine possesses a stock of native blacks which have yielded this season a surplus of 207 lb. net of comb-honey, and yet made no attempt to swarm all summer, though exposed to the full rays of the sun throughout the hot weather. And from this stock I intend to rear as many queens as I can, and have them mated with my cross-bred drones. In this way I feel very hopeful of producing a quiet good-working strain of bees.

I have never found the slightest trace of foul brood among my bees, although I have repeatedly come across that disease in other districts, and have several times been completely successful in curing affected stocks. I never have occasion to feed my bees at all, as they have nearly always more than enough honey in the brood-nest. I make a rule of taking out a frame or two of honey from the most advantageous place in each hive in order to give room for breeding in the end of the season, with the object of getting as many young bees as possible to stand the winter; and, by carrying out this plan carefully, I do not think of my bees dying during the winter or spring so long as the conditions named above are present. It seems to me that many bee-keepers do not bear in mind what an important item to successful bee-keeping is the keeping of all stocks in good, sound hives, with plenty of space for warm packing all around them which will render the bees weather-proof against frost, wind, and rain. It pays to work with good hives even in the saving of food or honey alone, my experience going to prove that the warmer the bees are kept the less honey will they consume.—I. CRAWFORD, *Castlefin, co. Donegal, Nov.* 15.

DISQUALIFYING EXHIBITS.

[3830.] I think we should have no sympathy for those whose exhibits have been disqualified through exceeding the limits of width of edging rule. Why, if we are a minute behind after a train has started we may as well be sixteen minutes; all our good intentions or other good qualities will not catch us that train. No more should we that prize if we are one-sixteenth of an inch over the mark. Better, I say, to come one minute early and keep one-sixteenth within the limit than run the risk of disappointment.

As to duplicate awards, I have always held that in such classes as butter and honey, exhibitors (with entries unlimited) should only be awarded one premium, the steward or attending member of the committee being instructed to debar duplicates when once an exhibitor has gained a position. I think there is a good deal of sense in the reply of a worthy old Scotch judge whose services are much in requisition, but who can never be persuaded to judge at butter shows when more than one entry is received from competitors. "Why," he

says, "take a man with three entries, if you give him a first prize you risk your reputation as a judge if you do not give him second and third; and even then, if you manage to hit off the three, he will tell you, 'You dinna ken butter; you should have made them a' equal, as they were a' off ae' kirn.'"—B. B., *Biggar, November* 20.

THE SNOWBERRY.

[3831.] Referring to the letter on the botanical name of the Snowberry, which appeared on page 442 of B.B.J., I would say that in a list of plants cultivated in the neighbourhood of London, which I have by me (*Hortus Suburbanus Londinensis*, published in 1818), the name of the Snowberry is given as *Chiococca*, the cluster-flowered variety being *Chiococca racemosa*. This is given in the above book on the authority of "Willdenow's Species Plantarum."—A "Bee Journal" Reader, *London, W.C.*

IVY HONEY.

PRICE OF SECTIONS: A PRINTER'S ERROR.

[3832.] After reading Mr. John Berry's account of his experience as given in Bee Journal for November 16 (page 451) about the ivy being such a poor honey-producing plant, I inquired of a bee-keeping friend, and was given to understand by him that his bees gather a large quantity of honey from the ivy. While mentioning Mr. John Berry, I may say it is not very encouraging for young bee-keepers (like myself, who live in the same district as Mr. Berry) to learn that he offers his honey in sections at 1s. 9d. per dozen! How, Mr. Editor, are we to expect to get a remunerative price when a bee-keeper who is wintering 107 stocks offers his at such a price? —A Would-be Bee-Keeper, *Llandudno, N. Wales, November* 18.

[It is difficult to imagine any but "a young bee-keeper" being misled by the slight printer's error in placing the comma after the word "dozen" on page 452. However, we trust it will relieve the mind of our correspondent (who is evidently serious) to know that Mr. Berry's offer was to knock off 1s. 9d. per dozen from the actual price if his customer would accept unglazed sections in lieu of those glazed as usual. In apologising to Mr. Berry for the "slip" we do not think it will have disturbed him much, as, being an experienced bee-keeper, he would, no doubt, understand it was a "slip."—Eds.]

LOCATION FOR AN APIARY.

[3833.] I am on the look-out for a suitable district—say about fifteen miles from London—whereon to establish an apiary. In my present locality there is not room for a lot of bees, for the few stooks I already have seem to gather all the honey to be had in the district, and I would therefore ask: Does any reader know of a small farmhouse or cottage with an acre or so of ground to let in a district suitable for bee-keeping, say about fifteen miles from London?

I have taken the B.B.J. for about seven years, and learned all I know about bees from its pages and the help obtained from the "Guide Book."

Your timely rebuke—given some eighteen months ago—with regard to transferring bees in skeps to bar-frame hives awoke me to the fact that "rule of thumb" would not work, but that a little thought and the exercise of one's own intelligence are necessary in addition to the help given by your publications.—"Anxious One," *Edgware, Middlesex, November* 14.

[We shall be glad if some reader will kindly supply the information asked for above.—Eds.]

PREPARING BEES FOR WINTER.

A correspondent wants to know when is the best time to prepare his bees for winter, and thinks it will be better to wait till the brood is out of the way in November, at which time he can fix them up and feed them so that they can carry the food right into the centre of the brood-nest where the brood has lately hatched. I have already been writing of late on this subject, but as the questions still come in, it may be well to say a few words more along the line of getting the bees ready for winter.

To the above I would say, do not on any account wait till cold weather comes before fixing the bees for winter, for, if you do, the frost will be almost sure to come and find your bees not ready for it. Years ago I used to think that the middle of November was time enough to look after the winter necessities of the bees, but when that time came something would occur so that I would think that waiting a few more days would do no harm, and so I kept putting it off and putting it off till I was caught by snow and freezing cold weather, and, as I write, I remember about writing an article telling how I had equalised the stores of certain colonies when the mercury was near zero, considering that I had accomplished quite a feat in doing it. Well, the next spring found me mourning the loss of many bees, and, upon asking, I received advice from that great writer of yore—Elisha Gallup—telling me that the months of August and September were the ones in which bees should be got ready for winter. After profiting by this advice for many years, I am sure he was right, and more especially so where the bees have not stores enough to carry them through to the next honey harvest.

If there is one item above another having great importance in the wintering problem, it is the securing of winter stores near and about the cluster of bees in time for them to settle

down into that quiescent state so conducive to good wintering, prior to the middle of October, in the more northern localities.

To arrange these stores properly and seal them requires warm weather; hence all will see the fallacy of putting off caring for the bees till cold weather arrives, as is the thought expressed by our correspondent.

To be sure that all have the desired amount of stores, there is only one certain way, and that is to open the hives and take out each frame and weigh it, after having shaken the bees off. Next weigh a frame of empty comb, or several of them, so as to know the average weight, which, when deducted from the weight of those in the hive, will give the amount of honey, note being made in all cases of the quantity of pollen the combs contain, their age, &c., and the necessary allowance being made accordingly.

Not long ago I saw it advised to put into an empty hive the number of combs used in wintering, and weigh the hive so arranged, when the hives in the apiary were to be weighed, the amount of the other deducted, and if there was 20 lb. left above this deduction there would be sufficient stores in that hive for wintering on the summer stands, and if there was 15 lb. it would do very well for cellar-wintering. No one could make any mistake in calling such a method a careless procedure, and one which would tend toward making wintering a failure. Hives subject to the weather weigh more than do dry hives probably taken from the store-room; colonies of bees also differ very much as to size and weight; while old combs weigh double that of new ones; combs from a colony which was queenless for some time during the summer will often contain pollen to one-half of the amount allowed for cellar-wintering; hence these and other factors make that method of procedure little better than guesswork.

Again, the amount named is too little by far, were this all available stores. If after going over a hive and weighing each comb as I have given above, I find that there is 25 lb. of actual stores, I call that hive or colony all right for winter. If less, it must be fed to make up the deficiency; if more, it can spare some to help another colony which is lacking in that amount. In this way the whole apiary should be gone over, equalising and feeding, if it is required, until all have the requisite 25 lb.

But I hear some one say, "It would be a fearful job to shake off the bees from every comb in a colony and weigh each comb separately." Well, so it would be if done with each colony, yet I think it would pay in the long run, even then; but you will have to do this with only two or three till you get the right conception of just how much honey there is in each frame, by simply lifting it from the hive and looking at it, when you can count off the number of pounds almost to a certainty, and do it as rapidly as you can handle the frames. However, you will have to weigh a few if you have never practised this plan, to give you the necessary training required, after which you can count off combs of honey so as to rarely vary more than a pound or two, and when the apiary is thus gone over there is a certainty about it which always gives success; besides we can say we positively *know* in this matter, which is a great satisfaction, to say the least.

But another letter before me asks for my plan of making winter food where there are not stores enough for wintering in the whole yard, after equalising. I have given my formula several times of late, but as I have had several calls for it during the past two weeks, I will briefly repeat it:—

In a vessel of sufficient size put in 15 lb. of water. Set over the fire till it boils, then stir in 30 lb. of granulated sugar. Allow the whole to boil again, then remove from the fire and stir in 5 lb. of extracted honey. When cool enough it is ready for use, and makes about 50 lb. of food, which is fully equal if not superior to the best honey.

Another writes, "Is not tartaric acid or vinegar as good for keeping the syrup from crystallising as the honey?" My answer to this is *no*. There is nothing I ever tried which will equal honey, and I would have the honey, even if I had to send into another State for it, and pay more than it was worth in the market, at that.

But still another writes me, "I am afraid of getting foul brood with the honey." To my mind, there need be no fears on this score, for, were you to be unfortunate enough to get foul-broody honey it would not carry the disease to your bees if none of it was secured by them in any other way than in the food, for, according to all of my experience of the past, the boiling syrup will scald the honey sufficiently so as to kill all germs of foul brood, if the food is made as I have given.

I regret to know that there must be such a general wholesale feeding in many portions of our country this fall on account of the poorness of the season of 1899.—G. M. DOOLITTLE, *in "American Bee Journal."*

HOMES OF THE HONEY-BEE.

THE APIARIES OF OUR READERS.

Mr. David Ramsay, a part of whose typical little Scotch apiary is shown on next page, is regarded as one of the most enthusiastic bee-men in the north of Fife. Although not very advantageously situated so far as location, his bees yield him a satisfactory amount of profit and an abundance of pleasure; "for nothing delights him more," as we are told by one who knows him, "than rendering help and advice to any beginner in bee-keeping." In this way he has assisted not a few who are now successful members of the craft. Asked for a few

particulars regarding his bee experiences, Mr. Ramsay writes :—

"When a boy at Crail I was often employed holding the skeps for the purpose of hiving bees into them, which was done not without some fear and trembling. I have, from that time onward, always had a great liking for bees, but not until I got a place of my own, some ten years ago, did I commence keeping a few hives. I had read a book on bee-culture which aroused my enthusiasm, and forthwith I purchased a swarm in a skep. In the following spring I transferred them to a bar-frame hive, and that same year took off 85 lb. of honey in supers. From that time I gradually increased my stock, adding usually one extra hive each season. The year 1897 was my best one, when I got 96 lb. from one hive by extracting. In that year I had altogether over 360 lb. of honey from my few stocks. This year, owing to the bad season in our part of Scotland, my yield has only been a little over 200 lb. Although provided with a super-clearer, I seldom use it, as I find the old way suits me just as well. The stocks are removed to clean hives every spring, the old hives being thoroughly cleansed with hot water and carbolic and newly painted. This plan I consider a sure preventive against foul-brood. The past season has, with me, been very prolific in swarms. This I attribute to the bees not being kept busy, owing to the season. Taking advantage of that, I have been able to re-queen all my stocks with young queens, which should tell in my favour in 1900. At present I have eleven stocks, and all are strong and in first-class order for wintering. Regarding the disposal of my honey I have no difficulty, and can command 1s. per lb. for comb and 10d. per lb. extracted. I may say that the situation of Tayport is not well adapted for bees, as the River Tay is too wide for the bees to cross, and a good deal of the ground near here is waste, while there is not much heather within reach. I do not have the time to devote to my bees that I should like, being almost constantly employed, but I consider bee-keeping both profitable and most interesting."

MR. DAVID RAMSAY'S APIARY, TAYPORT, FIFESHIRE.

We also learn that, in addition to the bees, Mr. Ramsay is a successful breeder of Scotch "fancy" canaries, of which he has a large stock. He is also a great poultry man; and in all these he is ably assisted by his wife.

We congratulate our friend on his choice of home hobbies and on the possession of a "guid wife" who can share them with him.

METEOROLOGICAL

OBSERVATIONS TAKEN AT KETTON, STAMFORD, RUTLAND, FOR THE WEEK ENDING NOV. 18, 1899.

1899.	Bar. in.	Tem. 9am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.	Wind.
Nov. 12..	30·16	47·1	52	38	14	45·0	—	W
,, 13..	30·25	47·2	54	43	11	48·5	—	SW
,, 14..	30·12	44·3	53	41	12	47·0	—	S
,, 15..	30·47	46·9	50	36	14	43·0	—	NW
,, 16..	30·60	40·2	49	34	15	41·5	—	N
,, 17..	30·63	40·0	47	31	16	39·0	—	NE
,, 18..	30·61	28·5	39	25	14	32·0	—	N
Means ..	30·41	42·0	49·1	35·4	13 7	42·3	—	—

Mean vapour tension, 0·239 in.; mean relative humidity, 88 per cent.; mean temp. of the dew point, 38°·6. For the week ending November 11 the mean temp., viz., 49°·8, was + 6°·6, and the rainfall, viz., ·58 in., was −·02 in. The mean temp., October 29 to November 11, viz., 50°·4, is + 6°·7, and the rainfall, viz., 1·75 in., is + ·55 in.

EXCESSIVE RAINFALL.

I find in the *Weekly Weather Report* of the Meteorological Office for the week ending Saturday, November 11, that, "In most districts the excess was large, especially in England S. and Scotland W. The largest daily fall was that of Sunday, when 1·64 in. fell at Cranley, 1·56 in. at Westbourne (Emsworth), 1·44 in. in London, and 1·35 in. at Southampton. In London the fall for the week, viz., 2·32 in., was almost exactly identical with the mean value for the whole of November."

FRED. COVENTRY.

The Vale, Ketton, Stamford, November 19.

Queries and Replies.

[2303.] *Mismeasured Brood-chambers.* — I have eight colonies of bees, six of them being in straw skeps, the other two in frame-hives. I made the latter myself, and now find the side-bars of the frames in brood-chamber are stuck to the front of the hive, owing to my not leaving a bee-space between the ends of frames and front part of body-box. Would you inform me how to remove the frames and bees into another hive, and if it ought to be done now or in the spring? — THOS. PARKEN, *Calstock, Cornwall, November* 16.

REPLY.—In order to avoid upsetting the bees at this season, the operation of transferring combs and bees to a new hive had better be deferred till next spring. Choose a warm day—when bees are flying freely—and begin by placing the new hive on the original stand, and the old one in rear thereof. Then, after removing the dummy, pass the blade of a table-knife between side-bar of frame and the inside wall of hive, to sever the propolis that causes the frame to "stick," as stated. Next raise the frame up, and, while resting the bottom bar on the edge of the new hive, scrape or cut away all propolis before gently and quietly inserting it therein. Repeat the operation till all frames are freed from propolis and replaced.

[2304.] "*Wells" v. Single Queened Hive.*—You have on several occasions given me valuable advice in bee-matters, and I again apologise for trespassing on your kindness with regard to the following:—I am intending to add several new hives to my apiary for the next season, and am in doubt whether to work my extra colonies on the "Wells" or the single-queen system. I have had no practical experience with the "Wells" hive, but am well acquainted with the theory of the system. As to working of ordinary hives I have a good knowledge of that, gained from studying several standard works on modern bee-keeping and your valuable B.B. JOURNAL, coupled with eleven years' practical experience in the management of an apiary of over a hundred colonies. Before going in largely for the "Wells" hives, I should like to know whether they really are a commercial success in skilled hands? From the reports which reach the B.J. office respecting the merits and demerits of the "Wells" I feel sure you can give me some information. — BEE-KEEPER, *Cambs., November* 16.

REPLY.—In answering an enquiry with regard to the advantage or otherwise of adopting the "Wells" or double queen system—coming from a bee-keeper with eleven years' practical experience of bee-management, and over a hundred colonies to deal with, one naturally supposes that our usual advice to "go slow" with Mr. Wells' system might be dispensed with. But even in this case we recommend that three or four hives at most should be tried before making a change that may be regretted. It would also be useful (if our correspondent has the back numbers of the B.J. by him) to go over the *pros* and *cons* of the case as detailed in our pages by those who have succeeded or failed in working the double-queen system. Not a few, like Mr. Rymer (whose "Wells" apiary was shown last year on page 105) have done well, but others have failed, so that no one can really say with any degree of certainty who will make it pay.

[2305.] *Removing Propolis from Section Separators.*—My tin three-section dividers have got rather rusty from being left wet after washing, before putting away for use next year. I have rubbed off a good deal of propolis, but some still remains. Will this injure the bees or damage the honey when used again? There are also yellow marks on dividers, and various soilings which do not come off with methylated spirit; it is more round the edges. 2. Are these soilings of the tin in any way harmful? 3. Are tins always safe to use as receptacles for honey? I have mine well scoured, but would like to know what are signs when the tins become too old for use, without risk from the action of honey upon the metal. 4. Are two-bee-way sections better than the four-way

ones? The latter were badly propolised with me this summer, the wood of sections being soiled and made to look quite dirty. 5. When giving two section-racks to one hive, should I put the second rack above the first without any covering over top side of first sections? Otherwise I do not see how the bees will reach the second rack without soiling the top sides of lower lot of sections. 6. What is the proper distance to allow between sections to the top bars of the frames below? And has this anything as to the bees propolising base of sections?—BLACKSMITH, *Worcester, November* 15.

REPLY.—1. A little rust is in no way harmful to bees, nor can there possibly be any appreciable quantity of rust on a surface of tin that has been cleaned with methylated spirit. 2. Stains on tin will neither harm bees or honey. 3. If honey-tins are well dried on the insides after washing, they will last for years. The signs of becoming unfit for use are brought about by water left round the bottom edges causing rust and consequent discolouration of the honey. 4. Most practical bee-men prefer the two-way sections. 5. The best way of keeping the wood of section perfectly free from travel stain is to use a hanging-frame section-box. 6. One-quarter inch. If less, the bees use propolis; if more, brace-combs are often built.

A BEE-KEEPERS' EXCHANGE.

HOW TO ENSURE SUCCESS.

Read at the U.S.A. Bee-keepers' Convention, Philadelphia, September, 1899.

A bee-keeper's exchange is simply another name for co-operation among bee-keepers. Bee-keepers are producers, and the history of business as it is, and has been, shows that successful co-operative business ventures are not very numerous, but there are some that are entirely successful, showing that when conditions are right, and good business judgment is used in conducting the enterprise, co-operation can be made a success, and be very beneficial to those who are connected with it. Then let us see first what are the conditions necessary to success.

1st. Co-operative action must be necessary in order that the producers who propose to work together shall be able to make their industry pay its best. For instance, a dozen bee-keepers living near a large town or city where all of their products can find ready sale, at prices as good as could be obtained in any other market, will find little incentive to join forces, because each can readily dispose of his crop to as good an advantage as he could through a co-operative concern. On the other hand, a number of producers with no home market of any size, and living so far from other markets that shipments must be made in carload lots if the freight is not to consume the bulk of the proceeds, can not only co-operate to their mutual advantage, but really must do so if they are to obtain the best results; or, in some cases, any results at all.

2nd. Do not attempt to cover too much ground; in other words, co-operation should be undertaken only along those lines where it is absolutely necessary. When a number of men are working together, differences of opinion will arise as to plans and methods, and right here is where the danger usually lies in co-operation, hence the less the number of things that are attempted the less friction there will be. So I lay it down as a general rule to begin with in conducting a bee-keepers' exchange have only two main objects — namely, supplying cans or other packages for the honey, and marketing the product.

Some might suggest that the exchange should also furnish the members with their bee-supplies, and in some places this might be feasible, but here in Arizona we tried it once, and did not consider it a success. To do anything in this line, supplies would have to be bought in carload lots, and, outside of hives, not enough things are wanted each year to make up a carload. In this valley so many different kinds of hives are used that it was found impracticable to make up a car. So, as conditions are here, and as they are in most places where co-operation will be of any practical benefit to the honey producers, I believe that an "Exchange" should only attempt to supply cans and market the honey.

Wherever there are located a number of honey producers who, combined, produced honey in sufficient quantities to ship by the carload, I believe that successful co-operation is not only possible, but is really necessary in order to attain the best results. These producers must, of course, be located close enough together, so that they can get together occasionally to direct the management, and so that their honey can be concentrated at some central shipping point without too much expense. Given these conditions, a successful bee-keepers' exchange is not only possible but necessary.

The advantages to be derived through co-operation, where conditions are favourable, are so apparent that I do not deem it necessary to occupy time in setting them forth, I therefore, proceed to give the essential details for such an exchange.

How to Organise.—The best form for the organisation is probably an incorporation. The articles of incorporation should expressly provide that only honey-producers are eligible to buy voting stock in the company, and that whenever any stockholder ceases to be actually engaged in the production of honey, his share or shares of stock should not be votable at any meeting of the company unless it becomes the property of some honey-producer. This provision keeps the management of the organisation in the hands of those who are personally interested. Then it should be provided that

no proxy voting be allowed. This may work a hardship occasionally, but in the long run will be best. Those who have not enough interest to be present when properly notified should not complain, and my experience and observation in co-operative organisation show me that it will be best to allow no proxy votes.

To overcome the possibility of "no quorum," it should be provided that the secretary shall give each member notice by mail several days before the meeting, and where such notice has been given, five members (or some other small number) shall be qualified to transact business.

No considerable amount of working capital is advisable. First, because but little is needed; and, second, because the ownership of apiaries changes so frequently, and it would complicate matters very much if each share represented a considerable cash outlay. The purchase of cans is the only call for a considerable amount of cash, and for this it is better to arrange to borrow what is needed than to complicate matters by having a large capitalisation. For these reasons the shares of stock should be sold at a low figure, say, $1.00 to $2.00 each, and a person should be entitled to buy and vote one share for each fifty colonies of bees he owns, and no bee-keeper owning less than twenty-five colonies should be allowed a voting share in the organisation (although the product of the small producers should be handled for them when desired).

This plan fixes it so that each member's influence in the management is exactly in proportion to his interest, and this I believe to be the correct principle. Where the "one man, one vote" idea prevails, the man who produces a couple hundred pounds (and perhaps sells that at home) has as much influence in the selection of officers and in controlling the business of the exchange as the man who produces 50,000 lb. This is not right.

Meetings of the general membership should not be attempted often, as, besides the election of officers, little should be attempted by the general meeting except to decide upon the general policy and methods of doing the business. The important officers are the board of directors, five in number, and the secretary-treasurer, who is the business manager. The success of the exchange depends very largely upon the selection of the proper person for secretary and manager, as it will be necessary to allow him a good deal of discretion in conducting the business of the exchange. If the exchange covers a considerable scope of country, as it will in most cases, the directors will likely live some distance apart, and if the secretary is required to get the board together (which will usually take several days) before he can decide upon what action to take, a satisfactory business cannot be done. The board will have executive management, but the good judgment of the secretary must be trusted to a very large extent.

The secretary should be paid a fixed sum, either per car of can of honey, or else so much per case, both shipped in empty, and filled with honey and sent out, that is, handled so that his pay will be in proportion to the work done. A fund for meeting the running expenses of the exchange is raised by a charge of a few cents per car profit on empty cans furnished, and a few cents per car of honey shipped. The number of cents per car will, of course, have to be regulated according to how much is paid the secretary, and what the other expenses are.

In the spring each shipper furnishes the secretary with an estimate of the number of cases of cans he will need for the season, if the crop is an average one. Then one or more cars of cans, according to the prospect for a crop, are bought and distributed proportionally to the shippers, as, for instance, if the total of the estimates be 5,000 cans, and 2,500 cases are bought, each one receives 50 per cent. of his order, and if the season is a good one more cans are bought later.

Some pay cash for their cans, but the majority get them on time, to be paid for out of honey shipped, paying whatever interest on the deferred payment that the exchange pays. Those getting cans on time sign a receipt which provides that the cans remain the property of the exchange until paid for, and agree to ship honey to pay for them, or pay the cash by the time the first shipment is made. This enables us to deliver the cans direct from the car, and so save all cost of storage, and has been found to be effective against loss.

Marketing the Honey.—On the question of marketing honey, there will be differences of opinion as to the best plan, and no set rule can be laid down, but conditions and circumstances must be taken into consideration, and good business judgment be used. Some believe in selling only for cash, or its equivalent—on sight draft—at the point of shipping. Others believe that more money will be realised where shipments are made to reliable commission firms on consignment. Personally, I am of the opinion that this latter is the best plan generally. There are times when as much can be realised by cash sales, but in general it may be said, I think, that under existing conditions more can be realised by selling on commission. In deciding this question we must consider not only present profit, but a market for future crops. One thing must be arranged for, no matter what may be the plan of selling, namely, to manage that all shippers shall receive the same amount per pound for honey shipped about the same time. I sometimes ship several cars at or about the same time, some of which sell more quickly than others, and some perhaps sell for more per pound than others. In this case, the first money received is paid *pro rata* to all

shippers, and when all returns are in, the average net price per pound is found and settlement is made on that basis.

Each shipper's honey is marked by having his initials on each case, and as each lot is weighed separately, each one gets paid for just what he ships.

As my paper is already longer than I expected to make it, I will close. The opinions set forth are drawn from an experience of several years in an association of bee-keepers here (in Arizona), and I trust that the ideas here brought before you may be of some value to our fellow bee-keepers in some places where the conditions are right for co-operated action among honey-producers.—J. WEBSTER JOHNSON. *American Bee Journal.*

THE HONEY BEE IN AMERICA.

No one seems to have taken the time and trouble to thoroughly investigate the early history of the honey bee in America. Enough is known, however, to assure us that it is not indigenous to the country, but was, in all probability, imported by the early colonists. The earliest mention of honey in America, so far as considerable research discloses, is in Irving's account of De Soto's wanderings. While the adventurer was at the village of Ichiaha, in June, 1540, his men found a quantity of bears' grease preserved in pots, likewise oil made from the walnut, and a pot of honey. The latter they had not before seen, nor did they ever again meet with it during their wanderings. Some have inferred from this that the honey bee was in Florida at this period, and that it was indigenous to America. But this does not follow; first, because the village in which the honey was found was located in the country since known as Northern Georgia or perhaps Northern Alabama, and not in Florida; second, the honey mentioned was very possibly the prodnce of the bumble bee, which was a native, and very widely scattered. Nevertheless, the honey bee was probably introduced by the Spanish settlers in Florida at least at a later period, for Bartram, who explored the country in 1773, mentions honey and beeswax as articles of barter among the Indians. He speaks of honey in so many places in his book that it must have been quite common, and therefore, could not have been the product of the bumble bee, whose store of honey is very scant. Bartram was told by a physician that there were few or no bees west of the Peninsula of Florida, and but one hive in Mobile, which latter had been brought from Europe. Traders had also informed him that there was none in West Florida. At this period the honey bee was common all along the eastern shore of the country, from Nova Scotia southward. The fact that it was not found in the interior is good evidence that the insect was not a native of America. Otherwise, natural swarming would have distributed it throughout the land long before the arrival of the white man. Jonathan Carver, an Englishman, explored Wisconsin and the adjacent territory in 1766-67, and in his book, published soon after, he mentions the commonest insects. The honey bee is not among them, but the bumble bee is referred to as follows:—"The bees of America principally lodge their honey in the earth, to secure it from the ravages of the bears, who are remarkably fond of it." According to a writer in the *American Bee Journal* for July, 1866, the honey bee was first noticed by white men in Kentucky in 1780, in New York in 1793, and west of the Mississippi in 1797. At the present day this industrious little bee is scattered throughout America, and the production of honey is constantly increasing.

OUR LIBRARY TABLE.

(*Continued from page* 458.)

The Australasian Bee-keeper is the name of a new bee paper which has just made its appearance in New South Wales. It is edited by Pender Brothers, of West Maitland, New South Wales, and is a journal devoted to bees and honey and the bee-keeper's interest. It is to be published monthly, price 5s. a year. Messrs. Pender are practical bee-keepers and have a thorough knowledge of bee-keeping, and the new journal ought therefore to succeed in their hands. The first number, which lies before us, is full of promise, and we wish the Messrs. Pender success in their undertaking.

"*L'Apiculture (Système Eclectique) en Theorie et Pratique.*" *Par Claude Marcel Weber.* Published by the Société Centrale d'Apiculture et d'Insectologie, 28, Rue Serpenti, Paris; 3 fr. 50 cents; 8vo.

The author of this book, deviating from the usual course, has produced a volume on bee-keeping in verse instead of prose. Amongst the vast number of books on bees and bee-keeping, there are not many in verse; and since the famous poem of John Evans, M.D., issued in this country at the beginning of this century, no work of any consequence has appeared. Evans's book consisted of three parts, published in 1806, 1808, and 1813, was large quarto, and contained 297 pages. Only a limited number of copies were printed, and the work is now exceedingly scarce and consequently valuable. We are not aware of any important French bee-book in verse, therefore the volume before us will be welcomed by all those bee-keepers knowing the French language who prefer poetry to prose. Mr. Weber is a bee-keeper of forty years' experience, so that from this fact alone the book demands attention.

We have scanned its 310 pages, and gather from them that the author has considerable experience in modern methods, and that his instruction is, in the main, sound. He has got

into some slight confusion with respect to foul brood. He says the German doctors have called it "bacillus flavidus" (see line 6,505), and that Schrœter has recommended phenic acid (phenol) as a remedy. Then our author says (line 6,523) :—

"J'applaudis à Schrœter ; car l'acide phenique est le mêei venin, dont l'abmelle nous pique."

(I applaud Schrœter because phenic acid is the same poison with which the bee stings us.)

There is an error here, for it is well known that the poison is formic acid and not phenic acid. Then, again, at line 6,557 he speaks of the bee fumigating her ramparts by means of the phenic acid which escapes from her sting.

Some idea may be had of the amount of work entailed on the author in producing this volume when we say that there are no less than 11,002 lines of verse in this octavo volume, besides a dedication to the President of the French Republic, and a preface, also in verse. The book bristles with neologisms, which, to a certain extent, are a poet's licence, but they frequently obscure the sense, and certainly this will be the result to not a few bee-keepers. M. Weber has desired to step out of the beaten track, and give his readers something to amuse as well as to instruct them, and we congratulate him that he has succeeded in doing both admirably.

Notices to Correspondents & Inquirers.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

"White Clover" (St. Albans).—*Colour of Honey for Showing.*—Notwithstanding your friend's contrary opinion, the pale golden colour of sample sent is its strongest point for the show-bench. The flavour is good, but not of the highest class, while it is rather lacking in density.

W. P. Smith (Chichester).—*Pure Cane Sugar.—Reliquefying Honey.*—1. We believe the sugar you name is guaranteed by the refiners to be pure cane. 2. We are unable to give the address of the glass bottle company mentioned. 3. To reliquefy the granulated honey, immerse the "ripener" now containing it in a boiler, or other vessel, large enough to allow of the honey being completely surrounded by hot water. Jar off when the honey has become clear and bright. If the whole 5 cwt. cannot be liquefied at one melting, it must, of course, be dealt with in smaller lots.

An Old Subscriber (St. Paul's Cray).—*Keeping Honey in Tins.*—If properly ripe when tinned off, the honey will not be injured at all by keeping till next season.

An Old Subscriber.—*Address on Bee-keeping.*—We are not aware of any published article on the subject that is now obtainable. There should, however, be little difficulty in preparing a suitable address on bee-keeping to any one possessing a copy of either the "Guide Book" or the handbook for cottagers entitled "Modern Bee-keeping" both of which may be had from this office.

Bee-Blossom (Norwood).—*An International Show and Honey Fair Next Year.*—If it is supposed that the B.B.K.A. is to take upon itself the labour and responsibility involved in carrying out the "Show" suggested by our correspondent, we have no hesitation in saying that the Council would not for a moment entertain the idea of such a thing. On the other hand, if our correspondent cares to state his views briefly in formulating a practical scheme and is also willing to take some personal responsibility —say in endeavouring to form a committee willing to take the matter up—we should be very pleased to publish a communication from him on the subject.

Cheviot (Northumberland).—*Age of Queen.*—So far from being "about three years old" as stated, we judge queen sent to be not beyond her first year.

R. Maude (Co. Durham).—*Race of Bees.*—1. The bees received are hybrid Ligurians most probably, but not a second cross of that variety. 2. We imagine the "salmon-coloured substance" found in drawn-out combs of shallow-frames to be pollen, but cannot say for certain without seeing a sample of the "substance" referred to.

P. H. (Slough).—*Suspected Comb.*—The comb sent is affected with foul brood, but whether or not the stock it came from has "been diseased for two years" it is impossible for any one to say. The comb, however, is very old, and sadly needs getting rid of; this being so, we should make no attempt to treat the diseased stocks, but destroy them by fire, thus avoiding risk to the healthy colonies in your apiary.

Special Prepaid Advertisements.

Twelve words and under, Sixpence; for every additional Three words or under, One Penny.

HEATHER HONEY FOR SALE. Sample, 3d. Apply, Robt. Hunton, Leatholm, Grosmont, Yorks. 619

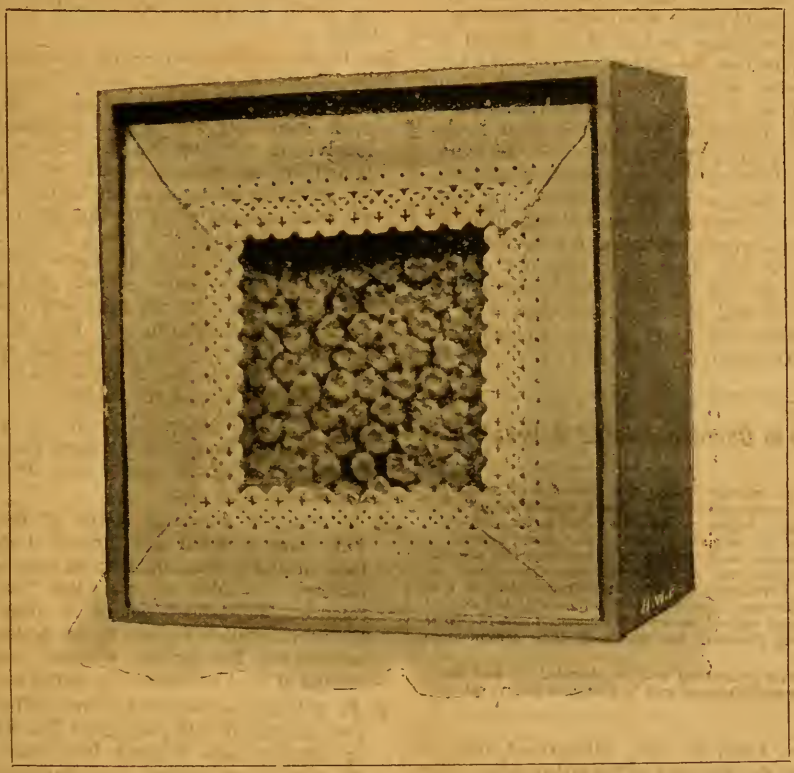
FOR SALE, prime SCOTCH HEATHER HONEY in Comb, at 11s. 6d. doz. here. Raitt, Blairgowrie.

ABOUT 60-lb. 1899 RUN HONEY. What offers? Thos. Edwards, Ardington, Wantage. 617

Editorial, Notices, &c.

USEFUL HINTS.

LACE-PAPER EDGING FOR SECTIONS.—The recent discussion in our pages with regard to limiting the width of lace-paper as an edging for sections, shows how general is the interest taken in the subject. We are therefore glad of the opportunity of placing before readers a useful object lesson illustrative of the extent to which width of edging is likely to go if much further "improved" upon. The illustration here presented is reproduced from a photograph of a section of comb-honey purchased at a shop in Oxford-street, London, a few days ago, from a large quantity similarly got up; and when we say that the actual measurement of the comb-surface, free of paper, is $2\frac{1}{8}$ in. square, it will be understood how excellent a method is the one adopted of hiding faults and imperfections. The section shown is enclosed in a folding section-case of wood, made precisely like an ordinary one-piece folding section, but $2\frac{3}{8}$ in. wide and grooved all round for "glassing" on both sides. The lace-paper is affixed to the inner surface of the glass, so that it does not touch the wood of section at all, but simply serves to conceal all but a very small portion of the comb from view.



Bearing in mind, too, how extremely fragile are these folding cases, it is safe to say that buyers would not be allowed to open a case for the purpose of examining the comb before purchasing. Nor could any one complain at such prohibition, seeing that a large percentage of the wood-cases would break at the corners if dealt with in this way.

It is not, of course, for a moment presumed that lace-paper edging carried to such extremes would ever be countenanced on the show-bench by judges, but the system of covering up honey to conceal defects should not be adopted, even from the purely commercial point of view, because a buyer—rather than be

"taken in" a second time—would fight shy of honey so prepared for sale.

On the other hand, and with reference to the supposed difficulty of conforming to the B.B.K.A. rule regarding width of edging of sections, we have within the last few days examined a section-case that entirely fulfils the object in view, fitted with as neat a lace-paper edging as any in the market, on all points, without any trouble to the bee-keeping exhibitor, and at a cost of less than 1s. 6d. per dozen for the cases.

FEEDING BEES IN NOVEMBER.—The very urgent needs of several bee-keepers who have written us within the last few days regarding the difficulty of supplying food to bees in skeps at this late season, make it desirable to refer to the matter in print for general use. We are told of skeps of bees—obtained in various ways, and, owing to circumstances into which we need not inquire, which came into the possession of our correspondents so late in the season as to be past feeding up in the ordinary way with syrup-food; their owners, in consequence, are troubled as to the best means of making them safe for winter. The difficulty, however, in framing a reply likely to be of service arises from the fact of having to deal with beginners in the craft, of whose aptness for dealing with "an awkward case" we know nothing. For instance, one writer innocently inquires if he "had better transfer the bees and combs to frame-hives *at once*, before feeding-up, or defer the transferring till spring?" And this in the month of November!

On the whole, then, we think it bes to say that bees (in skeps especially) found with a very small quantity of stores so late as this, are in a most precarious condition indeed for facing the coming winter; under the circumstances, therefore, the best course is to try them with a half-pint of *warm* syrup given in wide-mouthed bottle (a globe-shaped honey-jar is just the thing). Cover the mouth with coarse muslin, and after removing the plug of feed-hole coax the bees up by breathing gently between the combs, then at once invert the feeder, and insert it over any bees that show themselves. Fix the feeder firmly upright and wrap well with woollen coverings to conserve the warmth of the food while being taken down by the bees. If a second jar-full be offered and carried down all the better, after which a good-sized cake of soft candy must be thrust in at feed-hole, covered well to prevent up-draught, and the bees left to take their chance till the return of warmer weather in the coming year.

A "HINT" TO BUYERS.—For the benefit of readers who contemplate large purchases of appliances for next year's use, we advise ordering in the winter months when many manufacturers are willing to make a reduction from summer prices. This hint is offered not so much by way of ensuring better terms than those of 1899, but because of the probability that a general rise in prices will take place from those of last year's lists. Anyway, it is more than suggestive when we read of the A. I. Root Co. of Medina, Ohio—without doubt the most extensive manufacturers of bee goods in the world—announcing that all prices (both wholesale and retail) listed in their catalogue of bee goods are now withdrawn because, "owing to the phenomenal advance in the cost of raw materials, especially on timber of all kinds, it is impossible longer to maintain former prices." The advances are expected to "range from twenty to thirty per cent." We do not anticipate so heavy a rise as this among manufacturers here, but it may be taken for granted that the increase will be marked and general.

HONEY SHOW AT LUDLOW.

The fifth annual exhibition of the Ludlow Chrysanthemum and Fruit Society was held in the Town Hall, Ludlow, on Thursday, November 16, when a splendid display was made of flowers, fruit, and vegetables. There were also two open classes for honey, and this department was up to the level of excellence reached by other portions of the show. Twelve different counties were represented by eighteen entries in the extracted honey class, which was, without doubt, the finest single class ever brought together in this part of the country. Every exhibit was first-class, and the judge (Mr. Alfred Watkins, of Hereford) must have had an exceedingly onerous task in making his awards, which were as follows:—

Six 1-lb. Jars Extracted Honey.—1st, J. H. Wootton, Byford, Hereford; 2nd, H. F. Beale, Andover, Hants; 3rd, T. Salter, Belle Vue, Shrewsbury; v.h.c., W. G. Dean,

Woodford, Salisbury; W. E. Sharp, Ludlow; Mrs. Roese, Ludlow; h.c., W. Patchett, Caistor, Lincs.; Th. Lloyd, Brecon.

Six 1-lb. Sections.—1st, H. F. Beale; 2nd, Wm. Woodley, Newbury, Berks; 3rd, J. Pearman, Derby; v.h.c., T. Salter; h.c., Harry Wood, Lichfield.

The hon. sec. of the show, Mr. Jno. Palmer, had selected a very suitable position for these classes, which showed them off to great advantage, and the different samples were greatly admired.—(*Communicated.*)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to "The EDITORS of the 'British Bee Journal,' 17, *King William-street, Strand, London, W.C.*" *All business communications relating to Advertisements, &c., must be addressed to* "THE MANAGER, 'British Bee Journal' *Office*, 17, *King William-street, Strand, London, W.C.*"

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

CRYSTALLISATION OF BEESWAX.

MATHEMATICAL EXACTITUDE OF THE BEES' CELLS.

[3834.] Mr. Cowan's remarks on the crystallisation of beeswax, B. B. JOURNAL for November 9 (p. 440), need little comment, as they express so distinctly the true facts of the case.

Considering the nature of the inferences sought to be deduced from the interesting experiments of Messrs. C. Dawson and S. A. Woodhead, it would be impossible to accept the theory brought forward.

To throw another light upon the formation of the cell of the bee, I have copied a most interesting extract from Dr. Kinn's valuable book, "Moses and Geology," which is as follows:—

The honey is deposited in cells constructed with mathematical exactitude, each being a perfect hexagon, *one of the only three figures of which numbers can be placed together without leaving any interstices.** And further, the bottoms of these cells are even still more wonderful, as I will explain.

Every comb contains two sets of cells, one opening on each of its faces. The cells of one side, however, are not exactly opposite to those of the other, for the middle of each cell abuts against the point where the walls of the three cells meet on the opposite side, and thus the partition which separates the cells is greatly strengthened. This partition is not flat, but consists of three planes which meet each other at a particular angle, so as to make the centre of the cell its deepest part.

Now it can be proved by the aid of a mathematical calculation that, in order to combine the greatest strength with the least expenditure of material, the edges of these planes should have a certain fixed inclination; and the angles formed by the bees were ascertained, by the measurement of Maraldi to be 109° 28′ and 70° 32′ respectively.

By the very intricate calculation of König, it was determined that the angles for such a purpose should be 109° 26′ and 70° 34′ respectively. Here was a wonderful coincidence! The bees and the mathematicians differed by the small discrepancy of two minutes of a degree, or an angle subtended by $\frac{1}{10800}$th of a circle; an infinitesimal space in so small a thing as a bee-cell.

Were the bees by this minute fraction at fault, or did the geometrician err? We shall see.

Maclurin, the Scotch mathematician, was not satisfied with this explanation, and applied himself to a fresh and careful investigation of the question. He showed that, owing to a slight misprint in the logarithmic tables, the result previously obtained was erroneous to the exact amount of two minutes. So that the bees were in the right, even to this infinitesimal fraction, and the mathematicians were wrong.

What does this mean? Why, simply that the Creator has chosen to endow the bees with an instinct so wonderful that their work is actually perfection itself, and no man could imitate it with exactitude, even though his highly intellectual powers were aided by the most delicate instruments.

Now mark, what would take the apprenticeship of a lifetime for a man to do, these bees do without any teaching at all, for only a few hours after their transformation to perfect insects they commence their labour.—R. HAMLYN-HARRIS, F.Z.S., F.E.S., *November* 21.

* The italics are mine.—R. H. H.

ARE BEES A NUISANCE?

[3835.] The above heading, coupled with the extracts from a Cardiff paper, given in your issue of Nov. 16 (page 456), has set me thinking over the question, and as a result I offer a few words from Wychwood Forest, which may possibly help some one to keep clear of law troubles:—

First, then, we bee-keepers must not forget that, no matter how much we may enjoy being surrounded by bees, and however delightful it may be for us to hear their merry humming all

day long, to many persons the buzzing of a bee on the wing is a source of alarm, and even of nervous horror. Besides, so much ignorance prevails regarding bees and their ways that we need patience and the exercise of common sense in trying to make a smoother path for ourselves and the bees.

The ignorance regarding bees reminds me of the cockney who, on being entertained in the country, was offered some honey by his host, with the remark that it was of home production, exclaimed—"Then, I suppose, you keep a bee!" Seriously, though, we have wrong ideas and much prejudice to overcome, and it behoves us to arrange matters so that our neighbours shall have as little annoyance as possible.

In securing this desirable result, there is one way which, although not new, I know to be very effective, and that is to make one's neighbours overlook their aversion to the bees by reaching their hearts through the palate. In other words, let them have a nice *weighty* sample gratis, so that they can taste your honey. Then arrange so that your manipulations disturb the bees as little as possible; do not go and bang about the hives as if you were dealing with old England's foes. All bee-men worth the name should remember the motto—"Go softly, be gentle." Then always select the best time of day, and the most suitable days for your work; and if, after all your care, a bit of a rumpus occurs, do not forget that you are a man, and let go your temper, and say "cuss words," or utter talk that irritates every one and does no good. Remember that a brush charged with a weak solution of carbolic acid and water, sprinkled in the right direction, will work wonders in altering the ideas of a persistent bee as to where it (or she) is going to fly to or *settle down* on.

In locating hives, too, do not place them so that the bees clear your own paths, and fly just across your neighbour's; but where this is unavoidable, a few yards of wire netting, or trellis-work of any kind, judiciously fixed, will do a lot in directing the line of flight of the bees, and carry them above the line which may incline them to mischief. Remember that we are placed in this world to make the best of life—and a smooth pathway for all—and the best way is not to bump against our brother man more than we can help, for, after all,

"The sunshine or the shadow of our lives
Is less in our surroundings than ourselves."

—JOHN KIBBLE, *Charlbury, Oxfordshire, November* 23.

SECTIONS FOR EXHIBITION.

PAPER-LACE EDGING.

[3836.] There seems to be considerable discussion on this subject in the B.B.J., and rightly too. I could not get to the annual conversazione of the B.B.K.A. or I should have said a word, but as your pages are ever open to fair discussion I gladly avail myself, thereof to add a few words. I am, as you know, a bee-keeper of only a few years standing, but have learned much during those years from literature, observation, and practice. Now had I the framing of the rules for judging sections I would certainly insist upon (*a*) honey in sections being sampled, and (*b*) paper-lace being banished. My reasons are (1), unless the honey is sampled there is a great temptation to fraud; (2) paper-lace covers a multitude of imperfections, such as:—

(*a*) Comb being badly attached to wood of section, making the latter unfit to travel through the rough hands of carrier officials.

(*b*) Cells unsealed and full, or partly full, of honey, causing weeping down the face of comb thus presenting an unsaleable appearance.

(*c*) The presence of propolis and other stains on the wood of the section, which an ignorant purchaser might object to on the ground that the propolis, &c., was excreta and therefore highly objectionable.

(*d*) Paper-lace is an impediment to the judges in arriving at a quick determination of the merits of the exhibits.

If my ideas are worth anything to the official judges or the executive of the B.B.K.A. they are welcome to them, and I am sure their adoption would be welcomed by a large number of honest exhibitors.—JNO. W. SPENCER, *Church House Apiary, Atworth, Wilts, November* 23.

BEE-KEEPING AND ELEMENTARY SCHOOLS.

BEES AT THE WHITECHAPEL MUSEUM.

[3837.] With the kind assistance of Mr. Broughton Carr and Messrs. James Lee & Son, the Commissioners for this institution were able to invite the teachers in the elementary schools of the district to bring classes of children to the Museum on Wednesday, Thursday, and Friday last to see living bees in an observatory hive, and to hear "Talks on Bees" and their work. Twenty schools availed themselves of this invitation, and twenty-seven classes were brought to the museum. A half-hour's demonstration was given to each, and 523 children and their teachers were introduced to the "queen bee."

One chapter at least of their reading-books is now a reality for these children.

The exhibit included also a small modern hive, honey in sections and in a skep, extracted honey, specimens of comb-foundations, &c. It was open to the public after 5 p.m., and was as much appreciated by them as by the children.—K. M. H, *Curator, London, E., November* 22.

(*Correspondence continued on page* 474)

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Mr. Sawyer belongs to that very useful class of bee-keepers who are also gardeners by profession, and bearing in mind the many gardeners who regard bees as a nuisance, and oppose in every way the introduction of a hive into the garden, it will be admitted that a gardener bee-keeper is a most useful man to the craft as a whole. Such a one is our friend whose apiary is shown below, and we are glad to learn that he is in the employ of so ardent a bee-keeper as the Rev. Mr. Wilkinson. Writing of himself, Mr. Sawyer says :—

"In answer to your request for a few notes regarding myself, I might say it is now nearly twelve years since I first became a bee-keeper. My father at that time took over possession of a garden in which were three skeps of bees that had belonged to the previous owner. As usual, he thought that the chief mission of bees was to sting, and so promptly handed them over to me, with instructions not to disturb them too much. I was then only a lad at school, and knew nothing about taking the honey from them in the autumn. So a friend offered to come and show me how to proceed in order to secure the honey without destroying the bees. But it was not until two years later, on entering the service of the Rev. S. R. Wilkinson, that I became acquainted with the modern methods of the craft. As my employer has been a practical bee-keeper for many years, and I was myself an enthusiastic pupil, it was not long before I began to understand the management of bar-frame hives. But of all the things that I learnt to appreciate thoroughly from Mr. Wilkinson's able teaching was the importance of keeping all colonies strong, with only the best of young queens at their head. And to this I attribute the greater part of my success. At the age of eighteen I was successful in gaining the 3rd class certificate of the British Bee-Keepers' Association.

"My apiary, which now numbers twenty-two colonies, is situated in the centre of the town of Marlow, Bucks, with neighbours' gardens within a few yards of it, great care has, therefore, to be used in keeping the bees under proper control. But I am shortly about to remove my hives outside the town to a new location. Foul-brood has never been a trouble to me. But two years ago, when, with the assistance of my employer, Mr. Wilkinson, I was endeavouring to exterminate it from our neighbourhood, we had a good deal of trouble, but I hope the disease will now be kept away. I always work my hives for sections because of being able to find a more ready sale for them, and I generally dispose of all my produce before the end of September. I have managed to secure a good average yield from my stocks, which is somewhere about 50 lb. per hive for the last eight seasons; and I have also succeeded fairly well as an exhibitor. As I am now in

MR. G. SAWYER'S APIARY, MARLOW, BUCKS.

the trade, I make all my own hives and appliances, which occupies the spare time of long winter evenings. The figures shown in the picture, which was taken immediately after packing up for winter, are those of myself and my younger brother, who wields the smoker. He is my right hand in our mutual 'hobby,' for besides our own hives there are many bee-keepers whose hives we give a watchful eye to in our neighbourhood. I am also very fond of experimenting, especially in queen-rearing; and I am sorry to say more than one colony has had to suffer in consequence. I have this year been elected on the committee of our association (the Berks), and my opinion of bee-keeping is that it is an instructive, healthy, and profitable occupation. Besides being a bee-keeper I am also a member of our local fire brigade and Volunteer corps."

CORRESPONDENCE.

(*Continued from page* 472.)

THE SNOWBERRY.

[3838.] Permit me to offer the following particulars in reference to "A Bee Journal Reader's" letter (3831, p. 461), and that of Mr. Blundell (3818, p. 442), regarding the Snowberry.

In Grindon's "British and Garden Botany" (p. 516) the Snowberry is mentioned as belonging to the *Caprifoliaceæ*, or honeysuckle family, under the name of *Symphoria racemosa*, and as being a native of the Western States of North America, and especially of the banks of the Missouri. The *Chiococca* is also mentioned on p. 504 as belonging to the *Cinchonaceæ*, or coffee-tree family, and as having brilliant white berries. Evidently the above are two distinct plants, each bearing a white berry, probably closely alike. The Snowberry is mentioned, too, as a honey-producing plant under the name of *Symphoricarpus racemosus* in Root's "A B C of Bee-keeping," 1895 edition, p. 50. The name is, however, there printed "*Snowdrop*," no doubt in error for "Snowberry." Again—Balfour, "Manual of Botany," p. 511, describes the Snowberry as a dipyrenous drupe, under the name of *Symphoricarpus racemosus* among the *Caprifoliaceæ*.

I come to the conclusion that it is the latter plant, and not the *Chiococca*, that was referred to by the inquirer at the conversazione.—W. Winterton, *Wellingborough, November* 27.

A BEE-NOTE FROM HANTS.

[3839.] I send a few notes respecting our bee work for the past year in this part of the country. We, myself and brother, began the spring with five bar-frame hives and three skeps. Finding two of the frame-hives rather weak in bees, I united, and made one good stock of them, but the spring was so variable that little honey was got from fruit blossom. In fact, feeding was needed till the end of May. We have no white clover about here, and only a sprinkling of trifolium in the meadows around. As June advanced, however, things looked more prosperous. I added sections as fast as I could get bees to take them, and so prevented swarming, save from one skep, although others around us had to run after swarms. Several of our skeppist neighbours still stick to the old ways, and persistently condemn us for our "fads," as they call them. But this season has altered the views of at least one of them, who now begins to realise that it is not all "fad," after seeing our "take" of honey. As time went on honey continued to come in fast, when the weather became so hot and dry that the bees started clustering outside, covering the fronts of the hives from top to bottom, and I now feel convinced that but for want of time to give them proper attention and add more racks of sections our surplus would have been much greater. But we were so busy in our work of "budding" that the poor bees were neglected, and we lost a deal of honey which might have been ours. There are several lime trees about here of from twelve to sixteen years' growth, and these were a picture while in bloom, the bees crowding in them for sixteen hours some days. After this the heather began to yield very well, but the weather continued so hot that a great deal of it was scorched up. But after a shower or two the bees went to work on it again, and in the end we had eighty-one well-filled sections and 29 lb. from straw supers, making a total of 110 lb., for which we got good sale without having to walk away from the door to dispose of it. Sections brought 10d. each, and the comb-honey from straw supers 8d. and 9d. per lb., so you see we do fairly well in North Hants.

We are now wintering four frame-hives and an equal number of skeps, but it is the final winter for the latter in our apiary, for we have already got two frame-hives made, and hope to have two or three more before spring. We make our own hives, each of which is made to hold ten or eleven Standard frames. I may say the information in each week's B.B.J. goes that down with dinner every Friday with very good relish.—"Bert," *Blackwater, Hants, November* 21.

Queries and Replies.

[2306] *Transferring Bees to Frame Hive.*—I have a stock of bees in a skep, and I am thinking of placing them above the top bars of a bar-frame hive next spring, and letting the bees transfer themselves into same. But I

want the frame hive to stand on a spot about 10 yards distant from where the skep is now located, the ground being very uneven. Would there be any danger of the bees flying back to the old stand and getting lost, or would they take to the new home as a swarm or as a driven lot? I do not want to move the skep a short distance at a time if it can be avoided, as it is placed on a fixed stand, and would be very awkward to move. A brief reply in the columns of your valuable journal—which I have taken in for the last two years—will oblige.—W. E. SPIERS, *Worcester.*

REPLY.—Under the circumstances named we advise placing the frame - hive near the spot where the skep now stands, and as soon as convenient the latter may be placed above the top bars (as it is proposed to do next spring). In the meantime, however, allow the bees to use the ordinary skep entrance by fixing a square board above the frames and setting the skep thereon. Measures must, of course, be taken for protecting the lower hive from wet or damp, and when the bees have flown a few times from their new position the hives may be moved a few feet at a time towards the stand they are to occupy permanently.

[2307.] *Benches for Hive Stands.*—I shall be much obliged if, in next issue of your useful JOURNAL, you will inform me if there are any objections to benches for hives. I propose to make a long bench about a foot high for the accommodation of my hives, boarding a portion of each hive so that while attending to the bees I may stand on it any article I may be using instead of on the ground. My reason for asking the question is that in the JOURNAL of November 9, in your introductory remarks to "Homes of the Honey Bee" you appear to refer to them somewhat doubtfully.—W. T. C., *Southwick, near Brighton, November* 23.

REPLY.—The disadvantage of using a single bench or stand for a number of hives is that any disturbance—necessary or otherwise—caused by manipulating, &c., jars or shakes, more or less, every hive on the stand; the obvious effect being a lessening of the absolute quiet so beneficial to the well being of the bees themselves. Wherever room is no object, a practical bee-man will have his hives placed six feet or more apart, and each on its own stand.

NOVELTIES FOR 1900:

OUTFIT FOR BEE LECTURES OR FOR HOME USE.

In view of the increasing amount of public attention given to the subject of bee-keeping and the necessity of imparting instruction therein by means of lantern slides, it will be interesting to lecturers and scientific bee-keepers generally to learn of a useful novelty illustrated below and described by Messrs. Jas. Lee & Son, of High Holborn, who include the "Luvex" lantern (fig. 1) and the folding screen (fig. 2) in their stock of bee-keepers' appliances.

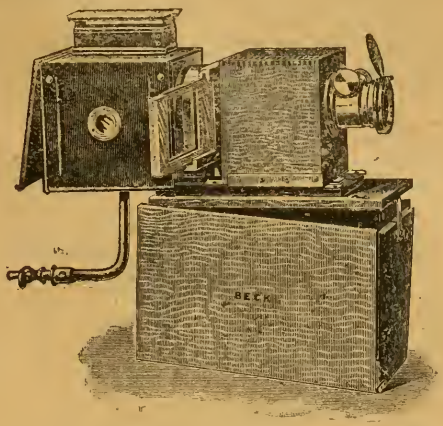


FIG. 1.—THE "LUVEX" LANTERN.

The lantern illustrated is arranged for ordinary house gas in connection with the Welsbach burner, which altogether simplifies the use of a lantern and reduces to a minimum the annoyance attendant on the use of paraffin oil or limelight illuminants. The only operation necessary is the joining up of the tube to any handy gas supply.

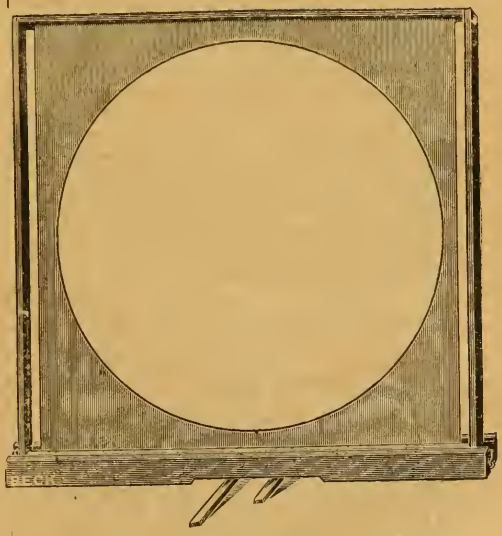


FIG. 2.—FOLDING SCREEN FOR TABLE USE.

The tracing paper screen here illustrated is made of the very best paper, and is mounted on a spring roller, so that it is always kept in good condition. When wanted for use it is simply pulled out by the top lath, and being fully extended, the side laths are fixed and the feet spread out. When closed, it is in the shape of a long compact box, shown on next page

(fig. 3), and thus takes up a very small amount of space.

The screen is 3 ft. 6 in. square—a convenient portable size.

FIG. 3.—SCREEN FOLDED AWAY IN CASE.

The "Luvex" lantern is very portable. The polished mahogany box into which the lantern is packed away measures only 12 in. by 8 in. by 7 in. over all, and in it there is also room for the slide carrier, cowl, and incandescent attachment. The lantern, when extended, measures 2 ft. by 1 ft. 6 in. by 7 in., thus a full-sized lantern is made to pack away into a very small box.

METEOROLOGICAL

OBSERVATIONS TAKEN AT KETTON, STAMFORD, RUTLAND, FOR THE WEEK ENDING NOV. 25, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.	Wind.
Nov. 19..	30·38	26·9	46	22	24	34·0	* —	N
,, 20..	30·14	45.9	51	27	24	39·0	·02	NW
,, 21..	30·34	39·0	47	31	16	39·0	—	NW
,, 22..	30·32	47·1	49	39	10	44·0	—	W
,, 23..	30·29	45·7	50	43	7	46·5	—	SW
,, 24..	30·17	48·0	54	39	15	46·5	—	SW
,, 25 .	30·24	48·9	52	45	7	48·5	—	SW
Means ..	30·27	41·3	49·9	35·1	14 7	42·5	·02*	—

* Total, ·02 in.

Mean vapour tension, 0·243 in.; mean relative humidity, 85 per cent.; mean temp. of the dew point, 38°·8. The rainfall, viz, ·02 in., = 452·46 gallons, or 2 02 tons to the acre, or 1 6 oz. to the square foot. For the week ending November 18 the mean temp., viz., 42°·3, was − 0°·1, and the rainfall, viz, nil, was −·62 in. The mean temp., October 29 to November 18, viz., 47°·7, is + 4°·4, and the rainfall, viz., 1·75 in., is −·07 in. The mean temp., November 5 to 18, viz., 46°·1, is + 3°·3, and the rainfall, ·58 in., is − ·64 in.

FRED. COVENTRY.

The Vale, Ketton, Stamford, November 26.

A PLAGUE OF BEES IN AFRICA.

I had been enticed into the Haweea country, N.E. Africa, by reports of elephants. From the time I set foot in that miserable country to the day I shook off the dust on leaving it I was pestered by a perfect plague of bees. The country was nothing but a wilderness—stony ground covered with thin thorn bushes. The afternoon of my arrival, after a terribly tiring march over stone and rock, I pitched camp by the side of a deep well in the solid rock. When my tent was up I threw myself on my bed—for I was dead beat—hoping to find rest. Not a bit of it. I jumped up quicker than I lay down, stung in the back by a bee. "No peace for the wicked," I said to myself as I took up my sponge, intending to have a bath, only to be stung in the hand by a swarm of bees which had settled upon the damp thing and were eagerly sucking up the moisture. It was becoming more than a joke. I poured out the water into my india-rubber bath amidst a buzz of approval from my thirsty companions. I took off my clothes, being stung in the attempt by a bee which had crawled through my stocking, and got into my bath. This, apparently, was the signal for a combined attack upon me. After the first spongeful of water had gone over me, a perfect swarm of the pests attacked my head, whilst dozens crawled all over my naked body. Twice was I stung in the head, and three times I picked out the stings from my body. At length I could stand it no longer. I ran amuck, threw bath, pail, water, sponge, towels, and bad language in every direction, dashed out of my tent and fled naked out of my zareba, followed by a grinning crowd of natives inquiring if I had taken leave of my senses. I sat for the rest of the afternoon in the shade, and as far from any water as possible, until the sun set, not venturing back to my tent. When the golden orb at length disappeared I returned to camp in my birthday garments, feeling rather chilly, and anointed my numerous stings with ammonia. Upon my tent floor, I discovered with my bare feet there still crawled the little demons, but they had mercifully ceased to fly for the night.

The next day was destined to be the most miserable I spent in this detestable country. From the very moment the sun peeped up over the horizon until it set like a great ball of fire in the west, an enormous army of bees pestered and annoyed me. I could not eat, drink, sit, sleep, stand, nor walk, but they would crawl all over me and sting me. It was all very fine to say "do not touch them, and they will not sting you," but the plagues tickled me so dreadfully as they crawled up my breeches, down my socks, into my shoes, round my head, and over my whole body that it was impossible not to keep brushing them away. I was stung almost everywhere. I was driven from my tent into a native tent, from there to the shade of a tree, from the tree to my tent again, but all to no purpose—the villains still pursued me. At length, in despair, I sat in the heat of a roaring fire. The scorching rays of the sun, the blinding heat of the fire, and the poisoning heat developed by my numerous bee-stings nearly drove me into a frenzy. All day long I waited on the chance of the men I had sent out in every direction coming back to camp with news of elephants, but they came not. The bees appeared to attack me and my "boy," and nobody else. Poor Deria stamped and jumped, and cursed and swore from morning till night. But then Deria was always in hot water. If a man threw a stone, it was always Deria's head which would intercept it. Whilst on the march before daylight,

if the branch of a tree protruded beyond the rest Deria's face would feel its thorns. If a camel fell, and store boxes flew in all directions, who was always found to be underneath but Deria? No wonder he wore such a disagreeable expression. The only things against the willing boy were his looks.

At night all my men returned reporting only old elephant spoor.

Next morning I sent them all out again in different directions, while I determined to wage war upon my enemies the bees. Accordingly I started off, accompanied by some half a dozen of my men, in search of their dwellings. We had not proceeded more than a few hundred yards when we came upon a huge ant-hill about 12 ft. in height. In and out of a hole, high up on the ant-hill, came bees by the thousand. We held a council of war. I suggested we should make a large fire close to the ant-hill before commencing the attack. My men, who were very anxious to get at the honey without the slightest delay, pooh-poohed the idea. No, they would throw stones at the huge pillar, make a breach of it, and abstract the honey. No sooner suggested than attempted. We attacked the stronghold with stones until a gaping hole was made in the fortress, when out issued thousands upon thousands of the enemy.. The attacking force fell backwards into the bushes, and were literally covered with the enemy's poisoned arrows. Those who had not fallen rushed madly through the bushes, swinging their arms about and tearing their sides with the thorns as they dashed panic-stricken through the bushes. For a moment I stood still and fairly shrieked with laughter, but the instant I took to my heels I was followed by the enemy, who wounded me in the head in several places. With the utmost difficulty I gathered together my scattered forces, some of the men having run a distance of a quarter of a mile away. Oh! how I laughed when I saw the swollen faces of my men. One of them had both his eyes bunged up, and his under-lip was swollen and pouted out to such an extent as to make him barely recognisable. The groans and "Allahs" emitted on every side betokened our utter defeat.

We now set to work to collect wood, which we piled at the base of the ant-hill and set fire to it. Sending back a man for a piece of rope and a couple of axes, we attached the former round the centre of the pillar, and with one united pull the wall of the stronghold fell with a crash. An enormous swarm of bees shot up into the air, but the heat from the fire was too great for them. The citadel was taken. Attacking the earth with an axe, we at length got at the hard-earned spoil. Every now and then a shriek would go up as one of us got stung! but when the great heat from the roaring furnace at last drove us back, we had filled two large bucketfuls of most excellent honey.

As no fresh elephant spoor could be found, I packed up next morning and marched, heartily glad to get out of the country and its plague of bees. I laughed afresh at the sorry sights of my men as I applied ammonia to their poisoned wounds.—C. V. A. Peel, the *Field.*

QUEEN EXCLUDERS.

IS THEIR USE ADVISABLE?

A correspondent writes me that a bee-friend of his thinks there is no need for using queen-excluders over the whole top of the hive under the surplus arrangement, but only just under the front and back end, putting a thin board under the centre, and thus save laying out so much money on queen-excluders. And from what he further writes I judge that he fears that the bees will not work as well over the board as they would were the whole top of the hive covered with the queen-excluding metal. He closes his letter by saying, "Won't you tell us through the columns of the *American Bee Journal* what you think in the matter?"

Well, I not only endorse those "fears" of the correspondent, but had he said he knew that bees would not work over the board as well as they would without it, I should have endorsed it equally quick. To be sure, I have known bees to go clear around division-boards and up into the roof of the hive, doing quite a business in this way building comb and storing honey there, but from close observation I am satisfied that the more perfect the connection between the brood department and the surplus arrangement, the more readily the bees start to work, and the quicker the bees start in the sections the better the results in the number of pounds of honey.

But I think I hear some one say, "If this is so, why do you recommend excluders at all, for the connection between the two departments cannot be as perfect with excluders as without them?" Very probably this is correct, but in reply I would say that it is not the largest number of pounds of honey that is always the most profitable to the apiarist; for if so, why not do as our fathers used to, hive our bees in barrels? Elisha Gallup once said that bees would store as much honey in a barrel or nail-keg as in any of the modern hives, and I have yet to hear any one dispute the assertion. Then why not do it?

Ah! but honey stored in this way is not in marketable shape. And honey stored without queen-excluders, especially where very shallow frames are used, is not always in marketable shape, for thousands of sections have been spoiled for market by having brood in them where excluders were not used. I contend that more honey *in marketable shape* can be secured by the use of separators and excluders than can be without them; and this is just the reason why I use them.

Our correspondent hints that the reason for not using the excluding metal, but a board

over the centre of the brood-nest, is that the field-bees when returning with their loads of honey do not go up through the centre of the hive, but at the ends. I think this is a mistake, for certainly the most of the hives of our fathers allowed them to go up nowhere else, and they secured much surplus in that way, my father taking as much as 75 lb. of comb honey from a single new swarm with a 2-in. hole bored in the centre of the top of the hive leading to the surplus department as the only means of communication between the two.

Then our correspondent asks further: "If the foregoing is right, does this theory not hold good concerning excluders that stand vertical? I am using large frames, and have much of my honey stored at the sides. Now when the bees march from the entrance toward the excluders, do they not move along at the bottom of the hive? and do they not, therefore, go through the lower rows of zinc? If I am right in this, how many rows would be needed before I used a thin board from them to the top of the hive?"

It is evident that my correspondent, as well as his bee-friend, is labouring under the delusion so often taught in the past, that the bee which gathers a load from the field must of necessity deposit that load in the surplus receptacles. For this reason outside entrances were made at the top of the hive, to be opened when the harvest came, so the bees could go direct from the fields to the boxes, thus saving them that much of travel and time, for it was too bad to have them travelling and being jostled and rubbed against all the way from the lower entrance up through the crowded hive in the dark when they could just as well go right from the field by daylight to the combs where they were to store the honey.

However nice and practical this appeared, the coming of the Italian bee virtually stopped up this upper entrance, for it was soon found that when there were only black bees going in and out at the entrance, just before the Italians commenced to work in the fields, there were very few, if any, black bees in the sections, and a look through the glass showed these black labourers giving up their loads of honey to the young Italians upon their return from the fields, allowing these nimble-footed young ones to run upstairs with the honey, taking the shortest and quickest way they could, whether at the top or bottom, front or back end, or right straight up through the centre.

Moreover, it was ascertained that, unless there was a very large yield of honey, these young ones held this honey in their honey-sacs, or deposited it in the brood-combs right among the brood, wherever an empty cell was found, till it was sufficiently ripened to be stored in the sections or placed permanently in the combs.

It is about time that the average bee-keeper comes to the conclusion that bees have no paths staked out, nor lawns with "Keep off the Grass" notices posted up, so as to guide them in certain directions in which they should go with their loads of pollen and nectar. The natural instinct of the bees is to cluster with and about the brood, and deposit their honey above and around it, and the more they are allowed to conform to this instinct the better will be the results, only we must guide them enough so that their product will be in the most saleable form when brought to a completion.—G. M. Doolittle, *in "American Bee Journal."*

Notices to Correspondents & Inquirers.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Enquirer (Witham, Essex).—*Transferring in Frame-hives.*—1. It would be a pity to disturb the bees at this late season, but if the need was urgent the transferring could be done on any warm day when the bees are flying freely. As a matter of fact, the frames and bees could be moved into a new hive in less than ten minutes by an ordinarily expert hand. If, however, the bees are packed for winter and there is no real reason for moving, leave them in the old hive till the spring. 2. The Hon. Sec. of the Essex B.K.A. is Mr. W. J. Sheppard, King's Head Hill, Chingford.

Veritas (Folkestone).—*Quality of Honey.*—It is no doubt very annoying to have what one knows to be genuine honey designated as "only sugar." In your case the mistake no doubt arises from the coarse, sugar-like grain of the honey now that it has granulated and become solid. If you took the trouble to melt a sample by immersing the jar containing it in hot water till the contents liquified, then set it to cool, and when the honey again begins to granulate stir it gently to "break the grain" and make it set "smooth," the hard, coarse grain it has at present will be removed.

J. H. Wilcox (Haydon Bridge). — *Bee Nomenclature.*—Insect sent is a worker bee of the common or native variety.

Ross (Kent). — *Experts' Certificates.* — The official information asked for only appears in print when duly furnished by the Secretary of the B.B.K.A.

E. Frowd (Liss, Hants).—*Quality of Honey.*—1. The sample is a mild heather honey of excellent quality on all points. 2. Bees received are of the common or native variety.

Editorial, Notices, &c.

BEE-KEEPERS AND "THE WAR."

A correspondent who dates from Grosmont, Yorks, November 7, makes a—no doubt well meant and kindly—suggestion for insertion in the B J. that "each of our readers should send a 1-lb. jar of honey as a New Year's gift for the sick and wounded from the Transvaal."

We are entirely in accord with any proposal that has for its object the relief of suffering borne in so good a cause, but bee-keepers must not forget how much more effective would be any small amount of help they could render if tendered in less bulk and more portable form than some hundreds of glass jars each containing a small quantity of honey. Nor do we think it wise for us to give too much prominence to any little aid we could afford. Far better, in our opinion, would it be for each intending donor to fix upon his quota of honey (large or small, as it may be), and after getting it up nicely for sale, offer it in his own locality. If the object of selling was stated, no doubt an enhanced price would be obtained, and then he could forward the sum to one or other of the many "funds" being raised for the relief of trouble caused by this lamentable war.

The "Absent-Minded Beggar" and the "lot o' little things he's left behind him," are "things" few of us are unmindful of at the present time, and there need be no difficulty to a bee-keeper in disposing of his "mite" to good purpose. At all events, if there be any such difficulty in the way, send it (the "mite") on to this office, and we will be delighted to dispose of both the difficulty and "mite" for him by placing the latter in good hands.

BRITISH BEE-KEEPERS' ASSOCIATION

The monthly meeting of the Council was held on Friday, the 1st inst., at 105, Jermyn-street, Mr. E. D. Till in the chair. There were also present Messrs. H. W. Brice, R. T. Andrews, W. Broughton Carr, J. M. Hooker, J. H. New, C. N. White, and the Secretary. Letters apologising for absence were received from Miss Gayton, the Hon. and Rev. Henry Bligh, Messrs. W. H. Harris, E. Walker, and F. B. White. The minutes of the previous meeting were read and confirmed.

Mrs. G. H. Rodwell, Woodlands, Holbrook, Ipswich, was duly elected to membership.

The Finance Committee presented a statement showing the position of the Association on November 30, and this, together with their recommendations in regard to payments, was formally adopted.

The draft schedule of prizes to be offered at the "Royal" Show at York in June next was brought forward by the Exhibitions Committee, and, with a few slight alterations, passed, subject to acceptance by the Royal Agricultural Society. The classification is much upon the lines adopted in connection with the "Royal" Show at Birmingham in 1898, but will include, for the first time, three classes for Extracted Honey to be gathered in 1900, viz., light-coloured, medium coloured, and dark honey.

FOOD VALUE OF HONEY.

ITS ADULTERATION AND ANALYSES.

An Address delivered at the Convention of the U.S.A. Bee-Keepers' Association, September, 1899, by Professor H. W. Wiley, Chief Chemist, U.S.A. Department of Agriculture.

A great poet and one who had a keen insight into the scientific laws of nature, said, about one hundred years ago, in language which I shall venture to translate :—

> "He who knows not all that has happened
> In three thousand years will never
> See the light nor have experience
> Even should he live for ever."

This statement of Goethe is true, also, in matters connected with honey.

It seems to me, therefore, in discussing the subject of honey as a food, that it would be wise to go back over the pages of history and see what uses were made of this substance during the past three thousand years, or even longer. If you will indulge me, therefore, I will preface what I have to say by a few extracts taken from historical pages, relating to honey and its uses. We ought to know what has been done in three thousand years, but I do not propose to take three thousand minutes to tell you.

Early History.—The tribes of men that live solely, or almost so, on flesh, use neither salt nor sweets. The transition from flesh-eating to plant-eating in the early history of all nations is attended with the consumption of salt and sweets. The word sweet is common to all dominant languages. In Sanscrit it first occurs, thousands of years old, as *svadu*, to make sweet ; *ydus* (Greek), *suavis* (Latin), &c. The use of honey in early historical times was connected with religious rites, chiefly because the fermented honey-water was supposed to contain a spirit powerful, and needing to be propitiated.

Wine or beer made from honey was known in the earliest historical times, known in Sanskrit as *madhu*, and in Greek as *meu*, and in German as *meth*.

Bee-culture was unknown to many early nations which valued wild honey. It is evident that Homer would have mentioned bee-culture had it been known to the Greeks in his time. Homer frequently mentions honey and its uses, but never suggests that men have anything to do with its production. Homer, in the ninth book of the Odyssey, calls wine the "red honey of the grape." A "land full of honey" to the ancient writers did not

mean the ideal land full of milk and honey, but a wilderness where the bees worked undisturbed in accumulating their stores.

While some attempts were made before the Christian era to increase the production of honey by man's aid, no true system of bee-culture can be said to have existed 2,000 years ago. This is plainly evident from a perusal of that book of the Georgics devoted by Virgil to bees and honey. During Pliny's life (died 79 A.D.), men learned to build rude hives, and even placed in them windows of isinglass in order to watch the bees at their work. Pliny had some remarkable ideas in regard to the propagation of bees. He states that if the carcases of young steers be covered with dung, Nature will change a portion of the steer's body into bees (Book XI.). This idea probably arose from the fable of Aristous, the first bee-keeper, who helped to compass the death of Eurydice. He was punished for this by having taken from him all his bees. He was advised by Proteus to supplicate the gods in a sacrifice of bullocks. He was delighted to see arise from their carcasses a new supply of bees.

Aristotle, who lived 350 years B.C., states that the bees make the wax, but gather the honey from Heaven—dew. Even up to the time of Virgil, and after, the ancient writers had no notion of the existence of sugar in flowers, but the honey gathered by the bees was supposed to be a direct gift of Heaven, or as Virgil describes it, "That gift of Heaven, ethereal honey."

The use of honey in baking is mentioned in the seventh century B.C. At the time of Aristophanes the use of honey in the bakeries of Athens was quite common (444 B.C.). The Athenian honey was very costly. Aristophanes says, "I beg thee, friend, use some other honey; spare the Attic, which costs four crowns."

Xenophon mentions a poisonous honey which made many of his soldiers ill. Investigations in late years, of honeys produced in the locality described by Xenophon, show that this poisonous principle is derived from the Jimson-weed (Datura stramonium), of whose flowers the bees are very fond.

In Rome in the earliest times honey was very costly, and it was used only in religious ceremonies and as a medicine. It was supposed to have valuable healing powers. It was only about 170 B.C. that it became cheap enough to be used in baking.

In Cæsar's time honey was used to a considerable extent. Vejanus, a bee-keeper near Falerimer, is said by Varro to have sold annually 10,000 sesterces worth ($650) of honey from a flower-garden of about one acre in extent. His bees probably poached on his neighbours' preserves.

During the empire, honey merchants and bakers were found in all parts of Rome, and poultry intended for the rich were fattened on honey and ground cereals.

During this period, also, the preservation of fruits in honey was first practised, and the foundations of a great modern industry laid. The preserving power of honey, however, was not discovered by the Romans, for Herodotus, who lived nearly 500 B.C., says that dead bodies in Eastern countries were preserved from decay by honey and wax.

It is said that the body of Agesipolis, king of Sparta, was preserved and sent home in this manner.

The Egyptians fed their sacred animals, *e.g.*, the crocodile, on goose-flesh and honey cakes, and pictures more than 4,000 years old of bees have been found in Egyptian antiquities. It seems, probable, therefore, that the Egyptians were the first to gather honey.

In Egypt honey was largely used, especially as a medicine. In an old Egyptian writing, at least 1500 B.C., have been found numerous recipes for remedies in which honey plays the most important part.

Hippocrates, the celebrated Grecian physician, who lived 450 B.C., describes many remedies in which honey was the chief ingredient, and ascribed to it remarkable curative properties. An ancient fable recites that in thankfulness the bees constructed a hive on his grave, and that honey of miraculous healing properties was produced therein.

Democritus, who was contemporary with Hippocrates, and who lived to be more than a hundred years old, when asked how to attain so green an old age, replied, "Honey within, oil without."

Many curious theories were developed in respect of the curative powers of honey and wine—not perhaps any more absurd than many of the so-called medical theories in vogue at the present time.

Macrobius, 400 A.D., explained the healing power of the mixture by saying that the old wine by reason of its moist nature was warming, while the honey, by reason of its dry nature was cooling. Pliny, on the other hand, ascribed the good effects to the property of honey, which prevents decay.

The early Christian era saw a great impulse given to the production of honey. The souls of the dead were represented as flying to Heaven in the form of bees. Honey became of more general use, and the wax was made into candles for religious uses. The discovery of paraffin has rendered less effective the old Christian legend that God blessed the bees as they were sent from Paradise, and that as a consequence no mass should be said without beeswax candles.

Bee-culture spread with great rapidity over Europe during the first millennium of the Christian era. In Spain honey became an article of export in the early centuries. The tithes of the church were paid in honey in many places. In Saxony honey and honey-bees were so abundant that a fire in Messina was extinguished with honey-bees in 1015. Nuremberg, however, seems to have been the chief centre of the German bee-industry. In

Russia, Poland, and Lithuania immense quantities of honey were produced at this time. A king of one of the Russian provinces was said to have given to the poor honey and honey-wine, while he himself lived on mare's milk.

In the old Indian writings honey is frequently mentioned. The new-born child was welcomed with a religious ceremonial, in which honey was the chief material employed, and the first artificial food of the infant was composed of honey and sour milk.

In taking honey from a hive the sacred books of the far East prescribed great care, in order that the hive be not injured. The wanton destruction of a hive was regarded as a heinous sin, and one of the 88,000 hells which are conveniently provided in the theology of Brahma and Buddha was set aside especially for sinners of that class.

The cultivation of the sugar-cane, which became generally known at the time of the Crusades, and the discovery of beet-sugar, 150 years ago, have made artificial sweets so cheap that bee-culture no longer, as it did in the middle centuries, controls the market for sweets, and few bee-hives are now found in the European countries where they were abundant 1,000 or 500 years ago.

(Conclusion next week.)

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

QUEEN INTRODUCTION.

SAFE METHOD OF INTRODUCING VALUABLE QUEENS.

[3840.] I beg to offer for the information of bee-keepers in the United Kingdom, who receive queen bees from Cyprus, the following directions (marked A and B) with regard to the introduction of valuable queens without loss, as I think the matter worth the careful attention of all the advanced bee-keepers.

Directions A.—On receiving a valuable queen by mail, first pry off the cover of box on which your address is written, in order to inspect the queen through the wire cloth. In case the queen is seen to be dead (which very seldom happens), leave the seals and wire cloth intact, re-nail the wooden cover to its place, and return the box to my address, to be replaced by another queen as soon as possible. But when the queen is seen to be alive and well, go to the colony to which you intend to introduce her and remove its queen, gently seizing her by the wings, and disposing of her according to her merits, *i.e.*, either sell or form a nucleus or destroy. After so doing, take a frame of comb containing brood and unsealed honey from the same hive, shake off the adhering bees in front of the hive, and carry this comb with the box containing the imported queen indoors into a room. After closing windows and doors, break the seals and remove the wire cloth from the box; allow the queen to come out and take a flight for a moment or two, and when she attempts to alight approach her with the comb and hold it towards her, and she will alight upon or walk on to it. Then carefully cover her with an American cage, of the pattern described on page 129 of the "British Bee-keepers' Guide Book" (this cage is easily made from a piece of wire cloth), or into any other suitable queen-cage, and fix by pressing the cage on the part of the comb having unsealed (fresh) honey, so that the queen may feed herself at will. If an American cage be used, push the cage so that the ends of the wires forming the edge may reach to the midrib of the comb. Next take the comb, with the queen caged thereon, to the colony that was about half an hour ago rendered queenless, and place it in the central part of the brood-nest; cover the frames as usual, and do not disturb the colony for about 96 hours (equal to four days). A term of 120 hours (or five days) is still better. After the expiration of the term mentioned, when no robber-bees are hovering about the hive, carefully take out the frame on which the queen is caged, and, by gently pulling out the cage from the comb, release her. On so doing, you will find that queens are almost in every case very favourably received.

Remarks.—In the above mode (A) the colony remains queenless, but for only about half an hour's time, and therefore the bees have not had time to realise the full extent of their loss as when they are kept queenless for some days, consequently they do not, as a rule, start queen cells, nor does it allow any chance of a fertile worker-bee to begin laying eggs. Egg-laying is only interrupted for the four or five days during which the introduced queen remains caged in the hive; this interruption is already unavoidable under any other method of introducing, because the queen after a long journey has to rest for about five days in order to recover the normal condition necessary before she can re-commence ovipositing. The queen on her way from one country to another suffers chiefly from the varying temperature, which, on an average, is generally much lower than the normal heat in any good stock of bees, and owing to such continued low temperature, her ovaries shrink (as in winter), and remain so until she is introduced to a good stock, where, within a few days, the heat maintained by the crowd of bees causes a resumption of the natural maternal conditions, and eggs are freely produced as before. In this way, therefore, there is almost no loss, and no avoidable cessation of egg-laying, while the little trouble involved is

well compensated by the perfect safety of the queen.

I have noticed that bees start queen-cells about twenty-four hours after the absence of their own mother is clearly realised and no other queen exists in the hive; but in both cases, whether another queen exists there or not, they hope, during the first two or three days, for the return of their own mother, and it seems to be owing chiefly to this hope that the old bees of the colony show hostility to an alien queen when offered to them; but, notwithstanding this hostility, the bees do not start queen-cells. It may be that they instinctively feel the known probability of her becoming the queen of their colony. But however this may be, I am almost certain that their hostility to the stranger gradually becomes less by the lapse of four days' time, soon after which, finding it expedient to accept a step-mother, they try to release her by gnawing down the comb to its midrib all round the cage.

I have also noticed the fact that fertile workers make their appearance when, after losing their mother, the bees from some cause have no means of raising another queen to keep up the strength of the colony, and that once such a misfortune occurs the owner has to break up the colony, cure being next to impossible. This view is shared by the author of the "Guide Book" (*vide* page 119). I, therefore, regard Mr. Simmins' method of "direct introduction" as being indirectly a very risky one, for the reason that the bee-keeper who expects a queen bee by post must (if I am correct) either render his colony queenless two or three days before the day on which he expects his queen by post, or on arrival he must keep her in the travelling-box or in other artificial arrangement until the colony has been for two or three days queenless and thus prepared to receive the queen to be directly introduced.* In the former case it may (and often does) happen that the queen arrives seven or fourteen days later than the due date (to say nothing of the chance of her arriving dead), and consequently the colony remains queenless so long that fertile workers appear, and the result is ruin to the colony. And in the latter case the queen has to remain a long time in distressing artificial conditions, which may prove fatal. I shall be much obliged to any B.J. reader who will prove the existence of any direct or indirect material advantage in the "direct introduction" plan over other known methods. On page 131 of the "Guide Book" the author says, respecting Mr. Simmins' method of direct introduction, "Failures will occasionally occur, and if queens are choice ones, the pipe-cover cage is to be preferred, as in releasing the queen" (at end of forty-eight hours) "we can always see if she is favourably received; and if not, we can take precautionary measures to ensure her safety." By the last sentence it is intended, I think, to re-cage the queen for further two or three days, which so added to the previous forty-eight hours make four or five days, in confirmation of the efficiency of directions A.

Directions "B."—Proceed same as in "A," except that you will remove the comb on which the mother-queen of the colony is, and place it (with queen and adhering bees) in an empty hive to form a nucleus, and add to it two or three frames fitted with comb-foundation; give some syrup, inside the nucleus, and reduce the entrance. Remove the queenless colony to another spot (five or more yards away from its former place), and place the nucleus having the mother-queen upon the original stand vacated by the removed queenless colony, so that all the old bees may find their mother-queen at the old spot and remain there. Soon after so doing proceed to introduce the imported queen to the queenless colony in the same manner as in "A," and reduce entrance to enable the young bees to guard it. Seventy-two hours after so doing the queen may be released, and she will be favourably received by the young bees in the hive, because it is always the old worker bees that "ball" and kill alien queens.

In conclusion I would again quote the "Guide Book," wherein the author, on page 131, says: "It is sometimes very difficult to introduce queens into hives having no young bees, as the old bees frequently encase the queen and hug her to death unless she is released." This shows how easy and very safe it is to introduce valuable queens to exclusively young bees.—M. G. Dervishian, *Nicosia, Cyprus, November* 20, 1899.

* Our correspondent is in error here. On the "Simmins" plan of direct introduction the queen to be deposed is not removed two days before introducing an alien queen.—Eds.

LACE-PAPER EDGING ON SECTIONS.

[3841.] Is not the divergence of opinion as to lace-paper edging for sections caused by the attempt to combine two separate and distinct things under one head? If the desired object is to produce specimens of the most attractive way of preparing sections for the market, then the width of lace-paper used would be a question for the judges, who would decide on the general appearance of the exhibit. But if the quality and appearance of the section itself is the thing to be judged, then I quite agree with Mr. Spencer (3836, page 472) that lace-paper should be banished, and the section judged on its own personal appearance and the quality of the honey.

Being but a beginner in the art and science of apiculture, I may be mistaken in my ideas as to the object of the exhibition, and not having, so far, seen my view of the case put forward in your journal, I thought I should like to see if it would contribute to a settlement of the question.—Alf. Matthews, *Melksham, Wilts, December* 1.

(*Correspondence continued on page* 484.)

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

The natural connection between farming and kee-keeping is, one would think, so obvious as to link the two pursuits together far more frequently than is the case in this country. Yet we are constrained to confess that it is rather unusual, though none the less pleasant, to write of an up-to-date bee-keeper who is at the same time a grazing-farmer on a large scale. Such, however, is the gentleman whose apiary forms our bee-garden picture this week. Mr. Cowley, we are told, also enjoys the somewhat rare distinction of being "a farmer who is never heard to complain of bad seasons:" a useful trait in one who has taken up modern bee-keeping, and now makes it a branch of his business. Our friend, however, takes less kindly to writing about himself for print, and has, in consequence, deputed a friendly neighbour, who is a bee-expert, and (as Mr. Cowley says) "knows all about my bees and bee-doings," to write us the necessary particulars, and to this gentleman we are indebted for the following:—

"Well, sir, Mr. Cowley can boast of being a bee-keeper for over forty years. But not until about six years ago did he begin to keep them on the modern or frame-hive principle. One day he invited me to have a look at his bees. I went over, and on getting into his garden we had to cut the rhubarb down before we could find the hives, and after some searching we came across a couple of stocks of bees in straw skeps. I lost no time in explaining to him the modern principle of bee-keeping, and it was decided I should send him over a wood frame-hive for a pattern, so he could make his own hives. He soon set about the job, and when he had got one ready I went over and transferred the bees from one of the skeps into it. After watching how I got on with the task, he was so pleased with the operation that he made another hive and transferred the bees of the second skep himself with only the help of his daughter. Each swarm he had after this was put into a frame-hive, with the result you see in the photograph. He has now one of the best apiaries in the county. The shed on the left hand (which is only half shown) is where he stores his supers and other bee-appliances; he also has a bench fixed up here for making his hives on, and for fixing his foundation in sections, &c. One specialty of Mr. Cowley's is having all his hive roofs hinged on the front so that he can raise the roof up and examine the hive without jarring the bees, as you are apt to do when roofs are loose and need lifting on and off. The roof, when so raised, also forms a kind of screen, behind which you can work without being so much noticed by the flying bees in front. All the hives seen have galvanised iron sheets on top of roofs.

"Mr. Cowley works entirely for sections by using the 'W.B.C.' section-box with hanging

MR. W. P. COWLEY'S APIARY, BRAYBROOK LODGE, NEAR MARKET HARBORO'.

frames and for extracting by using full-sized Standard frames.

He finds a ready sale in London both for his sections and extracted honey. In conclusion, I may say Mr. Cowley is a life-member of the Royal Agricultural Society, and makes a point of attending the Royal Show every year. Nor does he ever forget to pay the bee-department a visit now that he has become a modern bee-keeper."

CORRESPONDENCE.

(*Continued from page* 482.)

QUEEN EXCLUDERS.

[3842.] The article from the pen of Mr. Doolittle in last week's B.J., culled from the *American B.J.*, is a useful and convincing contribution to bee literature on the subject dealt with—the advisability of using queen excluders. In our BRITISH BEE JOURNAL the same question is frequently asked in one form or another by querists. Personally, I make it an invariable rule to use queen excluder under supers of every sort and kind. One season I had a good number of sections spoiled by having brood reared in them, and the rule just mentioned has been strictly enforced ever since. We often hear it said that a queen excluder is unnecessary when working for comb-honey in 1 lb. sections; but those who choose to accept this statement have only to wait till we have a showery season, when honey comes in slowly by fits and starts, in order to find that this statement is unreliable. Another reason often advanced against the use of queen excluder is that it is such a hindrance to the bees; but this year I had an opportunity to test and completely prove the fallacy of this theory. The bees of my three strongest stocks were given two excluders upon each hive, through which the bees had to climb with their loads, and as evidence that the excluder did not hinder the work I need only say that the bees did not swarm, neither were the returns in surplus honey from these three hives lessened at all; in fact, the yield from these hives was the largest in my apiary, even allowing for their greater strength to begin with. The season just closed was not a swarming season here, and these three stocks could not be forced to swarm by giving an extra queen excluder for the bees to pass through. I have never yet had a queen get through an excluder, but I remember once when a queen managed to pass under a bent corner of the excluder into the supers, of which I believe there were four on the hive at the time, and something more than a nice little job I had to find her.

In the current number of your monthly *Record* Mr. G. Franklin, of Kenilworth, refers to diminutive queens passing through excluders, and goes on to mention instances where such small queens that have come under his observation have been particularly prolific. I, too, had, four years ago, one of the smallest queens that I ever saw, and she was wonderfully prolific; but we bee-keepers are all too apt to favour the head of a community that is of showy proportions—sometimes at the expense of other and more useful qualities.

It has occurred to me that as we benefit so much by the recorded experiences of the pioneers in our pursuit, and the very liberal replies given by them to the inquiries of those of us who are still learning, our thanks are due to them for gratuitous assistance willingly given. The close of the year is a time when we quite naturally look back and call to mind many kindnesses bestowed upon us, and in thinking of those deserving our thanks. One whom we must place in the front rank of never-tiring helpers in our cause must be thanked now if we would ask him also to accept the compliments of the season with the next issue of the B.B.J. when it reaches him. I refer to Mr. G. M. Doolittle, from whom we have learned so much through his regular contributions to the bee literature of his country, and which is handed on to us in the pages of the B.B.J. I am afraid that our American friend must burn not only a good deal of midnight oil, but exhaust a good deal of the sap of life, too, in his endeavours to assist others. The same words apply to others of our own countrymen.—W. LOVEDAY, *Hatfield Heath, Harlow, Essex, December* 4.

THE SNOWBERRY.

[3843.] In his reference to the above-named plant your correspondent, Mr. Winterton, mentions two plants—*Symphoricarpus racemosus* and *Chiococca*—both being popularly named snowberry. This is a fact, but the latter plant is very little known in England. It is of the order *Rubiaceæ*, and is a stone evergreen, generally with a climbing habit, flowering in February. The former is the common snowberry of the garden. Nicholson's "Encyclopædia of Horticulture" says its flowers are much sought for by bees and the fruit is excellent food for game.

I have several hundred plants of violets (grown for market). I notice bees are very busy with the flowers.—W. J. BELDERSON, *Norfolk, December* 4.

PRICES OF HONEY.

[3844.] I have worked for extracted honey, and locally my charge has been 10d. per 1-lb. pot. As I am frequently sending flowers and fruit to market, I have enclosed several lots of honey to the salesman. In St. John's Market, Liverpool, 1-lb. pots made 8d. each, and, strange to say, ½ lbs. sold for the same price. The next consignment was 1-lb. pots, 8s. per dozen, ½-lbs, 4s.; so there is not the great advantage of the ½-lb. over the 1-lb. there was at first. I have also sent several consign-

ments to a Nottingham salesman, the same price being obtained; 1s. 6d. in the £ is charged for commission. This method of selling honey has advantages. You send a consignment just when you like, without waiting for or soliciting orders; there are no complaints of any kind, as the honey is sold by auction; and last, but no means least, you are sure of a cheque at the end of the time you appoint—either the conclusion of sale or the end of the week. I have no doubt any fruit and flower salesman at a large market would sell honey for any one sending it, and supply empties (boxes, I mean).—W. J. B., *Norfolk.*

BEES AND POULTRY.

[3845.] I have noticed in your correspondence columns from time to time questions regarding poultry catching and eating bees. This summer I had a good opportunity of watching poultry at "this game."

My hives are situated, along with one belonging to my father, in the poultry-yard, and I have stood and watched the fowls catch the bees and eat them. They seemed to be aware of the "business end" possessed by the bees, and killed the insect before attempting to swallow it. I may say that there were only three or four birds out of about thirty that carried on the business, and these were chickens of four or five months old.

To stop their "little game," I had to raise the hives up out of reach (about 4 ft.) when the mischief was stopped.

The honey season this year with me has been but fair, the dry weather having burnt up the clover almost as soon as it blossomed. I had a nice lot of lime honey, however. There was no mistaking it, the scent of the lime being quite discernable, especially in the extracted honey.—D. H. F., *East Cowes, November* 30.

GLASS HONEY-JARS.

[3846.] No doubt a good many readers have had the same experience as myself during the past season with honey-jars. I had one lot with "Registered" caps (soft metal). Some of the jars were slightly larger than others, and on trying the caps on I found that the slightest pressure in screwing up would spoil the "thread" in the cap, and of course render it useless. I shall not be likely to try soft caps again.

I then got some jars from an English firm, which, being machine-made, are of uniform size, and having hard metal caps that fit beautifully.

I must say, however, that the jars are not so elegant in shape, nor is glass so clear as in those of foreign make, but they look very well in shop windows, although I expect they would come off second-best on the show-bench. In future I shall be on the look-out for some good jars with "hard caps." Even then one must make sure that the caps all "fit," or the latter temper of that man will be worse than the first. I think if one of our firms of appliance dealers can manage to get hold of a manufacturer who will supply bottles of uniform size with hard caps that fit well, that firm will soon get their name up. At present, however, there is plenty of room for improvement in that direction, and a good honey-jar will be a boon to the busy bee-keeper.—D. H. F. *East Cowes, November* 1.

Queries and Replies.

[2308.] *Stocks Uniting of themselves in "Wells" Hive.*—I have been a bee-keeper for two years and am sorry to say do not know as much about bees as I should like to. I have the "Guide" and have taken the JOURNAL for nearly twelve months, and from the nature of the many questions answered in your columns, I believe you will be able to enlighten me on the following:—I have been attending to a double hive, made for two lots of bees on the "Wells" plan. A swarm came off in June, which was hived in the adjoining compartment of the hive. About the beginning of August I took off the supers and also removed the two outside frames from the brood chamber of the parent stock and covered up for the winter. About a fortnight ago I was feeding the young swarm (which, apart from the syrup I have given it, had very little stores) and turned up the quilt of the old swarm, and to my great surprise found no bees there! I examined the hive as thoroughly as I could, and I noticed that the floor was almost covered with fine particles of wax. The frames have been robbed of a good deal of honey, but there is still about 2 ft. super of stores left in the combs and a good many cells of dead brood. 1. What could be the reason for the swarm deserting one compartment of the hive, leaving honey and hive so late in the autumn? 2. There is a perforated barrier or dummy separating the two compartments—is that a detriment or no? 3. What would you advise me to do with the frames of honey? Ought I to cut away the brood and place them in the other hive or extract the honey and demolish the comb? 4. Two of my hives appear to be pested with ants, spiders, and other insects, which lodge between the casing and the hive—can you advise a remedy?—F. J. V., *Oreston, near Plymouth, Nov.* 30.

REPLY.—1. The reasons for bees in "Wells" hives acting as yours did are so varied that it would occupy too much space to go closely into them. But that bees do so act, and not seldom—sometimes in the autumn, and less frequently in the early spring—is certain, the most natural inference being that somehow the bees of one compartment become motherless, and in consequence they "go over" and

join their co-operative neighbours next door. In many cases the whole of the stores in the deserted compartment are removed along with the bees, but not always, as evidenced in your case by the floor being covered with broken cappings of sealed stores, the rest will probably be carried off in the spring if left where it now is. 2. The perforated dummy is an essential feature of the "Wells" hive; without it the Wells system is minus its main feature. 3. The sealed stores will be useful in feeding with in spring if the supply runs short. We should cut away the dead brood, and keep the part containing food in a warm cupboard till wanted in spring.

[2309.] *Confining Bees in Winter.*—I am only a beginner with bees and possess the "Guide-Book" and the "Cottagers' Handbook on Bees." I purchased a swarm last June and put them in a hive made of half-inch boards, with spaces at side for packing. I filled these spaces when preparing for winter with paper torn very small, but the bees have carried quite a large quantity of the paper outside, and I am now in fear lest the cold weather later on will affect the prosperity of my favourites. I therefore ask:—1. Should I close entrance to prevent the bees coming out until spring? If so, I could put the hive in a cosy shed and make them quite comfortable. If not advisable to keep the bees confined to the hive, I would not utilise the shed, as others have access thereto, and would object to me putting bees in it where they would possibly get stung. 2. In case the above plan is not practicable, what course would you advise me to pursue? I have been a regular subscriber to B.B J. since April last, and have seen many questions asked by others and replied to in its pages, which replies were specially applicable to myself. Several times I was about to write to you for help in difficulties, when, lo! in the next B.J. I found the substance of my intended question asked and satisfactorily answered. With a feeling of gratitude to querists unknown to me and to our editors, it is not necessary for me to say that I fully appreciate the aid I get from the whole of the contents of the JOURNAL.—A BEGINNER, *Peterston, near Cardiff, Nov.* 29.

REPLY.—1. To close the entrances of hives—left on their summer stands—in which bees are wintered, would, if the bees are imprisoned till next spring, as proposed, probably mean death to the colony. As for the bees carrying out the paper packing, it need not be torn into small pieces at all. Crush a whole newspaper at a time in packing the sides, if you pack at all; but there is really no need to trouble in this way. If the bees are warmly covered down above top-bars of frames they will be all right till February or March, when extra warmth is, no doubt, advantageous in building-up stocks early. 2. To put the hives into a "cosy shed" and confine the bees would also lead to trouble of various kinds, and perhaps to disaster. Leave them as they are after protecting well from wet and extreme cold, and take care to keep entrances cleared of dead bees, from time to time, when such are seen.

[2310.] *Books for Bee-keepers.*—A question was asked in the bee-column of the *Irish Homestead* (which corresponds to your "Query and Reply" column) as to the best book for an amateur bee-keeper to read. The reply given by the *Homestead* "Expert" is as follows:—"The best book for beginners is 'Modern Bee-keeping,' price 6d., as it embraces both natural history, or as much as is necessary for a beginner, and practical bee-keeping. We would warn readers, however, against the use of carbolic in the strength given in the book, viz, one part in two of water. It should be one in twenty. One ounce of carbolic is quite sufficient for a pint of warm water." Now I have got the book referred to, and as it is published by the British Bee-keepers' Association I am induced to ask who is right, the "Expert" who wrote the reply quoted above or the B.B.K.A.?—AN IRISH BEE-KEEPER, *co. Donegal, December* 2.

REPLY.—It is not for us to give reasons for the reply quoted above; but so far as the "warning" to readers of "Modern Bee-keeping" against using carbolic acid as "given in the book" is concerned, we may say carbolic acid is recommended on page 29 for "quieting" bees, to be used in solution prepared by adding 1 oz. of Calvert's No. 5 Acid to *a quart* of warm water. If it is pointed out where carbolic acid is advised for "one part in two of water," as stated, we shall be very pleased to admit the need for a "warning." Otherwise we must regard the discovery of a need for it as what is usually termed a "mare's nest."

METEOROLOGICAL

OBSERVATIONS TAKEN AT KETTON, STAMFORD, RUTLAND, FOR THE WEEK ENDING DEC 2, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.	Wind.
Nov. 26..	30·36	47·0	53	45	8	49·0	·01	SW
,, 27..	30·26	51·2	55	45	10	50·0	—	SW
,, 28..	30·36	42·5	53	37	16	45·0	—	W
,, 29..	30 39	43·8	54	38	16	46·0	—	SW
,, 30..	30·32	34·1	49	33	16	41·0	—	SW
Dec. 1..	29 98	47·1	55	34	21	44·9	·04	SW
,, 2 .	30·22	40·0	45	36	9	40·7	—	W
Means ..	30·27	43·7	52·0	38·3	13·7	45·2	·05*	—

* Total, ·05 in.

Mean vapour tension, 0·249 in.; mean relative humidity, 86 per cent.; mean temp. of the dew point, 39°·7. The rainfall, viz., ·05 in., =1,131·15 gallons, or 5·05 tons to the acre, or 4 oz. to the square foot. For the week ending November 25 the mean temp., viz., 42°·5, was + 0°·9, and the rainfall, viz, ·02 in., was −·66 in. The mean temp., November 5 to November 25, viz., 44°·9, is + 2°·5, and the rainfall, viz., 0·60 in., is

– 1·30 in. The mean temp., October 29 to November 25, viz., 46°·4, is + 3°·6, and the rainfall, viz., 1·77 in., is – ·73 in.

OBSERVATIONS TAKEN AT KETTON, STAMFORD, RUTLAND, DURING NOVEMBER, 1899.

Barometer.

(135 ft. above Mean Sea Level.)

Highest, 30·63 in., on the 17th.
Lowest, 29·34 in. on the 10th.
Range, 1·29 in.
Average height, 30·07 in.

Thermometer.

(145 ft. above Mean Sea Level.)

Highest Max. Shade Temp., 62 deg., on the 4th.
Lowest Max. Shade Temp., 39 deg., on the 18th.
Highest Min. Shade Temp., 50 deg., on the 3rd.
Lowest Min. Shade Temp., 22 deg., on the 19th.
Range, 40 deg.
Greatest Daily Range, 24 deg., on the 19th and 20th.
Least Daily Range, 7 deg., on the 5th, 8th, and 23rd.
Highest Shade Temp. at 9 a.m., 54 deg., on the 3rd.
Lowest Shade Temp. at 9 a.m., 26·9 deg., on the 19th.
Highest Mean Daily Temp., 54 deg., on the 3rd.
Lowest Mean Daily Temp., 32 deg., on the 18th.
Mean of Highest Daily Readings, 52·8 deg.
Mean of Lowest Daily Readings, 39·2 deg.
Mean of Daily Range of Temp., 13·6 deg.
Mean Temp. of the Month, 46·0 deg.
Number of days frost in shade, 5.
Mean of Dry Bulb (9 a.m.) Readings, 45·6 deg.
Mean of Wet Bulb Readings, 43·6 deg.
Mean Vapour Tension, 0·266 in.
Mean Relative Humidity, 86 per cent.
Mean Temp. of the Dew Point, 41·3 deg.

Rainfall.

(Gauge, 146 ft. above Mean Sea Level.)

Number of days on which ·01 in. or more fell, 8.
Greatest Fall in 24 Hours, 0·38 in. on the 3rd.
Total Fall in the Month, 1·16 in.

The rainfall, viz., 1·16 in., is –1·48 in, and =26,242·63 gallons, or 117·16 tons to the acre, or 5·8 lb. to the square foot.

FRED. COVENTRY.

The Vale, Ketton, Stamford.

WEATHER REPORT.

WESTBOURNE, SUSSEX.

NOVEMBER, 1899.

Rainfall, 4·52 in.
Heaviest fall, 1·54 in., on 5th.
Rain fell on 10 days.
Above average, 1·03 in.
Maximum Temperature, 57°, on 2nd.
Minimum Temperature, 29°, on 20th.
Minimum on Grass, 25°, on 20th.
Frosty Nights, 2.
Sunshine, 68 hrs.
Brightest day, 1st, 7·5 hours.
Sunless Days, 11.
Below average, 2·8 hours.
Mean Maximum, 51·3°.
Mean Minimum 39·4°.
Mean Temperature, 45·3°.
Above average, 2·6°.
Maximum Barometer, 30·73°, on 17th.
Minimum Barometer, 29·47°, on 8th.

L. B. BIRKETT.

HIVE VENTILATION DURING WINTER.

As I am engaged fixing my hives these days (the forepart of November), so far as the matter of covering over and around the frames, my mind chanced to wander into the past, and trace the way in which I had been led up to where I am to-day as to the subject of ventilation of bee-hives, and in so thinking it came to me that it might not be amiss to tell the readers of the *American Bee Journal* something about it.

Among many pleasant recollections the bees are ever foremost, and at ten years of age I was an anxious watcher of these little creatures, of which my father had from twenty to forty colonies, according as the seasons were good or poor. These were kept in what was then known as "Weeks'" patent hive, a hive which had the bottom-board attached to it with wire hooks and staples, and with a button so arranged that, for winter, the bottom was allowed to hang suspended an inch below the hive, while in summer the bottom was so turned as to bring the bottom-board tight to the under side of the hive, except the entrance. With this hive my father had poor success wintering bees, while a near neighbour wintered his safely with a hive closed tight at the bottom, and a 2-in. auger-hole at the top. This success of the neighbour, and my father's failure, caused him to fasten the bottom-boards of the "Weeks'" hive in winter, or rather leave them during the winter just as they were in summer; while the holes in the top, through which the bees had access to the surplus apartment, were opened, and the surplus chamber was filled with old garments, carpets, hay or straw, or something of the kind, just what came most handy. Fixed up in this way, we had very little trouble in wintering the bees thereafter.

The recollection of this matter caused me to believe that "upward ventilation," as it is often termed, was the proper kind of ventilation to give when the bees were wintered on the summer stands.

Soon after this nearly all the bees in these parts died of that dread disease foul brood, and no more were kept in the family until the year 1869, when I purchased two colonies, thus laying the foundation of my present apiary.

At that time (1869) there were plenty of bees kept all about here in box-hives, very many of which were raised on ½-in. blocks at the bottom all around, that being something similar to the old method of ventilation of the "Weeks'" hive, and quite nearly representing the rim 1 in. deep recommended by some writers of a decade or so ago. But I adopted the plan of "upward ventilation," as it was then termed, although I now look at it as practically no ventilation at all, in the sense of a draught of air, unless we can call it ventilation which we enjoy when sleeping under our warm coverings on a cold winter's night.

Soon after I commenced to use this upward ventilation plan there came a series of winters in which the box-hive men lost all their bees, while I met with scarcely any loss, and the bees in the woods seemed to be as numerous as ever. This set me to studying again, and by looking at the bees in their natural home in the hollow tree I found that the hollow was composed of partly-decayed wood, especially above the combs. Thus, in winter, the moisture from the bees passes into the decayed wood which surrounds them, and is expelled each summer by the heat. In this we had something pointing towards the porous covering which many of our best apiarists have used for years with such good success, and also towards the chaff hives used of late years with equally good success. With these chaff hives, and the slow change of air taking place there, the chaff or sawdust cushions, we have something even better than the home Nature provided for the bee; and with hives so arranged there need be very little provision for ventilation at the bottom, for, should the entrance become obstructed with snow, ice, or dead bees, so that all air is cut off from the bottom, the bees can secure all the ventilation they require through the chaff sides and cushion from above, thus passing nicely along until a warm spell occurs, when they can clear their doorway.

After years of experience with chaff hives, used in connection with sawdust cushions over the top of the brood-chamber, I have become convinced that there is nothing better along the line of hives for wintering bees on the summer stands than this, and I would hereby ask every reader who is at all sceptical on this point to prepare ten colonies in chaff hives with sawdust cushions as above, taking ten others as nearly like them as possible (except that they be left in ordinary hives with lower ventilation), and see if all scepticism does not vanish at the end of three or four years. I even use these chaff hives with sawdust cushions to quite an extent for cellar-wintering, and think that they have an advantage even there.

In connection with ventilation through porous covering, some think that, as all the moisture is carried off, the bees need to have water given them to keep them in a healthy condition; but I feel that such is wholly unnecessary, for the reason that I believe it a bad plan for the bees to breed much, if any, before the middle of March to the middle of April, according to the season and the locality, and bees need no water in the winter season except for breeding purposes. Colonies which commence breeding to any great extent earlier than this are not as good, as a rule, on June 1 as those of the same strength as to number of bees that do not commence to rear brood before April 1.

To avoid too early brood-rearing, it is a great help where they are packed in chaff along this line; for the sun's rays will not arouse the bees to activity, such activity causing brood-rearing every time it shines on them for a little while during the middle of the day when the air is cool otherwise. This early breeding causes a much greater consumption of honey and a far greater loss of bees without a corresponding benefit. When it comes steady warm weather two bees are reared for one old one lost, while in early spring or late winter two old bees are lost to where one young bee is reared; hence anything that causes early breeding becomes a loss to us both in bees and in stores.

Only as we look after all of these items which have a direct bearing on our pursuit, can we expect to become the most efficient in our calling in life.—G. M. DOOLITTLE, in *American Bee Journal*.

BEES IN HYDE PARK.

Mrs. Baden-Powell lives with her daughter in St. George's-place, overlooking the Park, at Hyde Park Corner. This is, probably, the only house in Central London that can boast of bee-hives. Mrs. Baden-Powell keeps bees on a balcony in front of her drawing-room window, and in the summer they gather honey in Hyde Park!

[The above appears in a London evening paper, dated December 4, and is sent by a correspondent, who very truly supposes that it will possess especial interest for bee-keepers, owing to the lady mentioned being—as we are given to understand—the mother of Colonel Baden-Powell, the gallant defender of Mafeking. We may also add that the bees referred to as located in Hyde Park built out the interesting exhibit in honey-comb which secured an award at the Hastings Show in 1897 for the Miss Baden-Powell mentioned in the above Press cutting. (*Vide* B.J., vol. xxv., p. 354.)—EDS.]

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

C. H. W. (Boston, Lincs).—"The A B C of Bee-Culture" may be had from this office, price 5s. 6d. (postage 5d.).

J. E. (N. Wales).—1. Honey received is a little lacking in ripeness to promise well for its keeping qualities; but for this fault it is a good honey. 2. It is almost wholly from heather.

P. SHACKLETON (Burnley).—*Bee-plants.*—Messrs. Sutton, the well-known seed-growers of Reading, publish a full list of bee flowers, and will no doubt forward it on application.

Editorial, Notices, &c.

"THE ABSENT-MINDED BEGGAR."

Our brief allusion on page 479 last week to the war in South Africa has brought forth a feature of the case which, although not quite new, is none the less regrettable. We refer to the words quoted by us from Rudyard Kipling's now famous poem, "The Absent-Minded Beggar." Those who along with ourselves indulge in the luxury of a daily paper will, no doubt, have noticed that an altogether wrong notion has obtained among some folks regarding the term "beggar" as applied to our soldiers, and not a few who labour under this misapprehension are giving expression to their views very strongly on the subject. Our usually non-contentious correspondent, Mr. W. Loveday, is very wroth with Mr. Kipling because of the latter being the author of "one of the greatest pieces of injustice ever done to the working men of this country, from whom our soldiers are mostly drawn." We think Mr. Loveday will hardly regret our not publishing his communication in full, when we assure him—and all who hold the same view—that the word "beggar" as used in Kipling's poem has no more connection with mendicancy than "ducky"—applied as a term of childish endearment—has to do with "duck and green peas!"

To make the matter plain, let us suppose the words of the offending line, "He's an absent-minded beggar," had been written thus:—"He's a careless sort of chap," would any cause of offence have then been discovered? But while the common-place words we have interlarded express the sense of Kipling's line, what a difference between them so far as expressiveness and force is concerned!

Absurd as it may seem to us, there is some excuse for the foreign translator who, with no knowledge of the idioms of our language, rendered the title of Kipling's poem, "The Idiotic Mendicant." Yet as a *literal* translation it is fairly correct. On the other hand, what says the man supposed to be maligned? Does "Tommy Atkins" misunderstand Kipling? Had any one who thinks he does been at the Albert Hall a few afternoons ago, when Mrs. Tree recited "The Absent-minded Beggar," and heard the soldiers present cheer at its conclusion, they would have realised what is known to be the truth, that, as a matter of fact, the name of Rudyard Kipling is dear to every man in our Army, which regards him as the soldier's poet and true friend.

We have said this much mainly in order to avoid what would seem to be a needless discussion if the matter was taken up *pro* and *con.* by readers, besides being entirely unsuited to the columns of a bee journal.

ROYAL DUBLIN SOCIETY:

WINTER SHOW, DECEMBER 5, 6, AND 7.

There was an encouraging advance in the exhibits of bee produce at the above show this year, with thirty-five entries in the classes for honey as against twenty-four in 1898, besides ten entries in a new class for beeswax. Of the exhibitors who obtained awards, all, except one, are members of the Irish Bee-keepers' Association.

The following is the prize list:—

Six 1-lb. Sections.—1st, E. B. Drought; 2nd, S. Crawford; h.c. and reserve No., W. R. Ramsay; h.c., George Insley.

Six 1-lb. Sections Heather Honey.—1st, Mrs. J. H. Staveley; 2nd, S. Crawford; h.c. and reserve No., Miss Montizambert; h.c., George Insley.

Twelve 1-lb. Jars Extracted Honey.—1st, Miss M. Daly; 2nd, Thos. J. Crowe; h.c. and reserve No., W. R. Ramsay; h.c., George Insley.

Twelve 1-lb. Jars Extracted Heather Honey.—1st, George Insley.

Beeswax (1 to 3 lb.).—1st, E. B. Drought; 2nd, Thos. J. Crowe; h.c. and reserve No., Capt. Magill.

In the four honey classes the prizes were: 1st, 20s., 2nd, 10s., respectively; and for beeswax, 1st, 10s., 2nd, 5s.—*Communicated.*

HONEY IMPORTS.

The value of honey imported into the United Kingdom during the month of November, 1899, was £451.—*From a return furnished to the* BRITISH BEE JOURNAL *by the Statistical Office, H.M. Customs.*

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

Communications relating to the literary department, reports of Associations, Shows, Meetings, Echoes, Queries, Books for Review, &c., must be addressed only to "The EDITORS of the 'British Bee Journal,' 17, *King William-street, Strand, London, W.C.*" *All business communications relating to Advertisements, &c., must be addressed to* "THE MANAGER, 'British Bee Journal' *Office*, 17, *King William-street, Strand, London, W.C.*".

*** *In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

NOTES BY THE WAY.

[3847.] Owing to the mild weather of late the bees have had many chances of flight—in fact, according to my opinion, too many flights for the good of the stock. In this, however, as in many other things, one can only conjec-

ture what might have been if we could have had our own way with regard to the weather at any particular period of the year. During the wind and rain prevalent at the early part of November a few hives in the neighbourhood were overturned, and I have heard since that the past fortnight of fine weather gave those particular stocks a good opportunity of setting things to rights after being put back into position by the owners.

The manifold views expressed by B J. correspondents on the late Dairy Show have enabled us to see the same things from different standpoints. Our veteran bee-keeping friend, Mr. Hooker, is quite able, I am sure, to explain in detail the remarks he made on judging comb-honey at the conversazione if he thinks well to do so; but, as I understood the matter, Mr. Hooker's remarks referred to the production of show sections. I would therefore ask, does not beauty and evenness of capping, getting sections of immaculate cleanliness well filled and sealed all round to the wood with only small "pop-holes" at the bottom corners, betoken "management"? And does not management have much to do with the production of these superior articles? I flatter myself that, during the past twenty years I have turned out more first quality sections than any other bee-keeper in England! And I also know that "management" has enabled me—year in year out—to still lead; therefore, in my opinion, Mr. Hooker was justified in what he said.

"Premiums on dishonesty" forsooth! It is an absurd idea to hint that the exhibits were not the production of the honey-bee! Anyway, regarding every ounce of honey staged from my apiaries during the last twenty years, I am prepared to give £100 to any hospital in London if it can be proved that it was not absolutely pure, as gathered by the bees from the nectaries of flowers, except in instances where the bees have collected a certain quantity of honey dew and stored same with the honey.

Referring to the letter of friend Brown (3826, page 459) on the subject of size of jars in trophy class, I have stated some reasons for discontinuing the use of various sized jars myself; but another reason is that some of these small samples are stolen every year. Then, again, the cost when filled; and if small bottles are sold at 3d. each, I pity the "masses" who purchase honey at 1s. 4d. per lb. in sample jars. It just comes to this: Where you have aliquot parts of a pound the purchaser who asks for a half pound or a pound of honey gets just weight for his money. Fruit, as Mr. Brown well knows, is sold by weight, not in samples; neither is two or three ounces given in by the vendor. Then why in honey?

Regarding shallow-frames I object to staging them, simply because they are unsaleable. The *three* staged on my exhibit had to be returned per rail. Is not this a cogent reason why I, as an exhibitor, do not wish to stage shallow frames? My idea is to simplify matters for exhibitors and only allow saleable quantities to be staged, thus helping producers to establish standard sizes in *British Honey*. I was sorry to see our friend imply that the "tall jar," won the first prize in his case. I thought it was the excellent honey from alsike clover that gained him the premier award, which those of us who had to take a lower position considered fairly won.—W. Woodley, *Beedon, Newbury*.

SELLING HONEY.

[3848.] I have no doubt many bee-keepers besides myself will be greatly obliged if your correspondent "W. J. B.," Norfolk (3844, p. 484) would kindly give the name and address of a reliable salesman in Nottingham or any large town he knows where one could send honey for sale. I am having great difficulty in selling my crop of honey, and an advertisement in the B.B.J. has not brought me any reply. Any information likely to assist in finding customers will be welcome. I fear bee-keepers in the near future will have trouble in selling their honey. Some writers in our bee journals are continually encouraging others to become competitors with us, knowing full well there are hundreds of bee-keepers every year that cannot sell their honey at a reasonable price. I never can make more than 8d. per lb. retail of the best, and sell very few pounds at that price, so it becomes plain to any one that those of us who have to rely on the wholesale trade must take very small profits for our labour. If, therefore, "W. J. B.," or any other readers of B.B.J. can render help in the disposing of our honey I have no doubt it will be highly esteemed by less fortunate bee-keepers like myself.—Chas. Wells, *Oxenden, Market Harboro', December* 11.

[There is no doubt that the bountiful honey harvest gathered this year has resulted in a somewhat overstocked market, with the almost certain result of the supply exceeding the present demand. Moreover, whenever this state of things comes about it is invariably felt most keenly where—owing to local surroundings or to the quality of the produce, or, more than all, to the bee-keeper's own lack of the qualities to make a good salesman—there is usually some trouble in marketing the crop. No fair-minded man can fail to notice the difference in the reports of B.J. readers, many of whom have sold out their crop of '99 months ago at a good price; but that there is plenty of honey still on sale is plain by the announcements in our advertising columns. However, our correspondent's reference to non-success therein caused us to look up his announcement in our issue of November 30, and he must pardon us for saying that it is not quite so well worded as it might be when

attracting buyers is the object. The term "What offers?" has, we think, rather a tendency to repel than attract, and to such a request the reply is often made, "I don't want to be both seller and buyer. What do you want for it?" We also note that the honey on offer is "dark" in colour. It may be—and no doubt is—good, or it would not have won first prize in a class for dark honey; but with equally good honey of light colour on offer we fear the wholesale buyer will follow the general rule of choosing that which sells most readily. Our advice to those who have good ripe honey still on hand is to hold their produce over till better times, rather than sell now at an unsatisfactory price. The fact that "honey will keep" is at least an advantage that cannot be claimed for many items of agricultural produce.—EDS.]

HONEY JARS.

SCREW-CAP *v.* GLOBE-SHAPED.

[3849.] I have had no experience personally, but a bee-keeper who has forty to fifty stocks told me he found that 50 per cent. of screw-cap honey jars leaked. He uses what I also use, and think much better, viz., the "Globe" honey jars, with corks. Mr. J. H. Howard, however, mentioned one difficulty at the conversazione of the B.B.K.A., namely, procuring them. The globe honey jar has, in my opinion, several advantages. It has — or should have—a well-fitting cork; this, if wished, can be dipped in sealing-wax and the name of the apiary stamped on it, then leakage is practically impossible. Another advantage is that the globe shape is not so deep, and does not require so long a spoon, and if the honey is very firm there is consequently less liability of bending the spoon. Screw-cap jars are, in my opinion, better fitted for dried fruits, &c., than a semi-liquid like honey. One leaky jar may mess a number of others, damage the labels, and so spoil the sale. Gladly would I now buy ½ and ¼ size globe jars, but the makers seem indifferent to orders. We shall have to fall back on foreign makes, I suppose.—ALPHA, *Hull, December* 8.

[The globe-shaped jar has, no doubt, an advantage in some hands over the screw-cap, so far as leakage is concerned, but in this respect it only equals the ordinary tie-over jar; while its disadvantage in comparison with the latter with regard to "bending the spoon" is, we think, more than compensated by the absence of an objectionable "shoulder," and the better shape for packing of the tie-over.

On the other hand, we would remind our correspondent that, as already hinted above, the more generally used screw-cap jar can be made perfectly safe from leakage by dipping the cork wad—sent with each jar—in molten wax and putting on the screw-cap while the wax is liquid (*vide* "Guide Book," page 89). It thus becomes clear that while allowing to bee-keepers full scope for the exercise of their individual preferences, there is no need to do more than name the "points" for and against each kind of jar and allow readers to "take their choice." They should not, however, overlook the obvious advantage of a screw-cap compared with a cork to the honey consumer.—EDS.]

HONEY BUYING.

[3850.] As some of your readers may possibly have had a similar experience to my own, I am sending you the following for insertion in the next issue of the BEE JOURNAL, if you think fit.

In answer to my advertisement of honey for sale in a certain paper, which it is not necessary to mention, I received a letter from a Mr. G. Wybrow, St. James's-walk, Clerkenwell, asking me to send off four dozen sections, saying that P.O. should be sent as soon as he heard from me that they were on the way. I happened to have only two and a half dozen sections left, these, however, were sent off at once, and a letter giving notice of same with bill for £1. I have never received the money, and my letters to the above address were returned to me a day or two ago from the Post Office, to the effect that Mr. Wybrow had gone leaving no address.

I do not know if any of your subscribers have been taken in in the same way—possibly by the same man. If so, it would be a good thing if he could be brought to book, but I do not see how.—G. H. OLDHAM, *Stanford Rectory, December* 8.

[We have no knowledge of the Mr. G. Wybrow mentioned above, but if this meets the eye of that person we shall be glad to publish any explanation he may have to offer regarding non-payment.—EDS.]

DECEMBER NOTES FROM YORKSHIRE.

[3851.] The wintry weather which has now come should serve to remind bee-keepers of the lovely time we have had for the last month or two. A real Michaelmas summer with bees as busy—well, as bees only can be. They have been nearly as much in evidence as the "war" and that is saying a good deal. Now, however, everything is quiet round the hives, and all work in the garden finished for the time being. Yesterday heavy rain began, and to-day it has come down harder than before, and with the night cold and wet we sit beside a roaring fire indoors and alternately discuss bee-doings and war news; thus mixing up the "happenings" in South Africa and our anxiety whether all our garrisons in the apiary at home are well provisioned for the siege to be waged against them by winter and Jack Frost's army. The mild, open, weather has kept bees stirring and

late breeding, which latter item has strengthened the colonies greatly; but it has also considerably lessened the stores of food. I find some hives which, when the heather was over, had ten full frames of honey; but now two and three of the outside combs are nearly empty. So we must make this good by giving combs of sealed stores or candy.

I might mention an occurrence quite novel, so far as my previous experience, but owing, no doubt, to the mildness of the season. The first day of this present month being fine and warm, while standing before the hives during dinner-hour, I heard what I took to be the buzz of a drone, and sure enough the gentleman arrived on the landing stage and made for the hive entrance, but in a brace of seconds out he came in charge of a couple of soldiers bent on "going for him" with their bayonets if he refused to die quietly; the poor fellow being pushed over the flight-board on his back on the ground and left there to perish. My first thought was —here's a go! a queenless colony in December! But I know they were all right and had a young queen when examined before packing the hive down for winter. However, I decided to have proof one way or another. So I got the smoker and commenced "business" by lifting up the centre frame, and, sure enough, there was her majesty safe and well. Not only so, but in the centre of the frame I saw about a dozen cells with brood just hatching out. It is the first time I have ever seen brood so late, or so early, which is it? Well, I will conclude by advising the raw recruits to put a good cake of candy on the top of their hives.—G. A. Barnes, *Thornton Dale, Yorks., Dec.* 6.

IRISH NOTES.

Bee-flowers in co. Kerry.

[3852] I have meant to send you some "Irish Notes" several times, but have been away from home a good deal. I have just come up from the garden, and have seen five bees busy on the *Limnanthes* bloom and three on Borage. Quite a record for December 9! And so I want to tell B. J. readers what a valuable plant *Limnanthes* is for bees here in the south-west. It is an annual, of course, but seeds so freely that it becomes a veritable weed, scattering itself in every nook and corner, and making a green carpet wherever it is left undisturbed. As we get practically no frost here, it blooms intermittently all the winter (as witness the specimens I send, together with some more outdoor pickings—fuchsia, scabious, aubrietia, and pentstemon), and in March is one mass of bloom and bees. They do love the *Limnanthes*, and "go for" it more vigorously than any other bee-plant I am acquainted with, except alsike clover. I planted about half an acre of the latter, and last season the patch was one "roar" with bees, and the white clover was quite neglected.

I wonder if you can tell from the maimed specimens I send what the enclosed insects are? They are found in great quantities going in and out of holes in a bank, up a mountain near here. I have not seen them myself, but got my son to procure a few. He said they were bees. I have kept them too long, I fear, but thought as I was sending the flowers I would enclose them.

I have a Cyprian queen in one hive—she was introduced in September to a stock of English bees that were very cross and bad tempered. When I last looked at them, the frames had a good many yellow bees on, and to their credit be it observed that while the black ones behaved in their usual aggravating manner (most undeserved, for I am quietness itself when handling my pets), the yellow ones walked calmly about and took no more notice of me than do my Ligurians or Carniolans.

The honey flow in Ireland has, I hear, been exceptional this season. In the North they are "tired of taking off sections"! and in my own neighbourhood I know of six, seven, and in one case eight section-racks being piled up on the hives, and all full!—C. A. P., *co. Kerry, December* 9.

[We have sent the insects on to Mr. Sladen, and hope to have the specimens named for next week's B.J.—Eds.]

"SURREY FOLK-LORE."

Bees and the weather.

[3853.] The following is an extract from *Notes and Queries* of May 6, 1882, page 346:

"*Weather Prognostication.*—The summer-like day of February 12 last was followed by wind and wet. Such unusually fine days are locally called 'weather heeders.' A man remarked to me, 'I knew we should have a change, for the bees were so busy yesterday. Whenever the bees get about at this time of year, I have always noticed that we are certain to get wind and rain next day.'—G. L. G."—Fred. Coventry, *The Vale, Ketton, Stamford, December* 11.

(*Correspondence continued on page* 494.)

HOMES OF THE HONEY BEE.

The apiaries of our readers.

Mr. Rathborne is a B.J. reader who has travelled far afield to plant his apiary and start bee-keeping; nor does anything in the photo, beyond his own stalwart form, remind us of England or a "home" apiary. The vine trellises, the hives, and, more than all, the picturesque looking old peasant who is his "factotum," all remind us of distant climes. But none the less do we welcome the opportunity of giving his bee-garden, as seen on next page, a place in our "Homes of the Honey Bee."

Regarding himself Mr. Rathborne writes :—

"The village of Plavia is 13 kilometers from Trieste, or about 8½ miles distant.

"Previous to starting bee-keeping in the modern way some seven years since, I had many a pleasant chat with my friend Mr. Burt, expert to the Gloucestershire Bee-keepers' Association, and with Mr. Schröder here in Trieste as to the best mode of starting bee-keeping. I made two large boxes capable of containing eighteen standard frames; they take also three racks of twenty-one sections each. The racks are home-made and the sections hang in frames. Altogether I have made 600 frames with my fretsaw! The apiary as shown in photo sent consists of twenty-four hives. The peasants, when they first saw these large hives, christened them 'dog-houses,' and they were the talk of the country round, saying, 'Have you seen the "dog-houses" at Plavia?' The long, narrow hives in photo are much used out here. The frames are 9½ in. square, each hive contains from twenty to thirty frames. The frames can be turned upside down for the bees to completely fill them. These are very handy and do not take up much room. The apiary is situated in a garden surrounded by vines, the country around being thickly studded with fruit trees: pears, apples, cherries (which grow on the roadside), olive woods and clover, from which most of my honey is derived. In winter time the bee-house with hives inside is surrounded with Indian corn straw, which keeps all snug and warm during the cold months. The year 1897 will be remembered out here as a very fair honey-yielding one.

"I am glad to say foul brood is almost unknown out here. I believe years ago one case did happen, but I have never seen that dreadful scourge yet, nor do I wish to. The peasants keep bees, but on the old system, in long boxes without frames. The second year they knock out each end, give the poor bees a puff of gunpowder, and then with a large stick they pound out all the combs into a tub with brood wax, bee-bread, &c. What a mixture! This honey (spare the word, Mr. Editor) they sell at about sixpence a pound.

"The old peasant in photo is my 'factotum.' He looks after the swarms and takes quite an interest in the bees. The noble 'bike' brings me amongst the bees in about one hour, and there I spend many a happy day reading our Bee Journal and looking after the hundred-and-one odd things required for next year. I hope to get about 150 sections full next season, but extracted honey goes best out here. My extractor I made myself, and smoker also; in fact, everything required in the apiary must be done at home. And I conclude by saying, 'Does bee-

MR. HENRY RATHBORNE'S APIARY, PLAVIA, ISTRIA (AUSTRIA).

keeping pay?' Answer: 'Certainly, and very well. If you can make all your hives, frames, extractor, smoker, section-racks, &c., yourself,' you will get a large return; but if you have to buy everything then the profits are greatly reduced.'

"In conclusion, I wish to thank my friends Mr. Burt and Mr. Schröder for all their past kindness, and to our BEE JOURNAL, from which I have gained much useful hints and knowledge, and wishing all our bee brothers every success."

CORRESPONDENCE.

(*Continued from page* 492.)

THE SNOWBERRY.

[3854.] With regard to the discussion in the B.J. relative to the "snowberry," may I be allowed to state that in "Loudon's Trees and Shrubs of Great Britain," page 542, the name given is *Symphoricarpus racemosus.* Flowers disposed in nearly terminal racemes. Corolla densely bearded inside. Style and stamens enclosed. Leaves glaucous beneath. Corolla, rose-coloured. Berries large, white. A bushy shrub with numerous ascending shoots. North America on mountains, near Lake Mistassins, on the banks of the Missouri, and various other places. Height, 4 ft. to 6 ft. Introduced in 1817. Flowers July to September. Fruit large, white, ripening in October, and remaining on great part of the winter. In small gardens this shrub is rather troublesome, from the numerous suckers it throws up from the roots, but as the flowers are much sought after by bees, and its berries are excellent food for game, that habit, when it is planted for these purposes, is found rather advantageous than otherwise. It is also called St. Peter's Wort. —ELVEY E. SMITH, *Southfleet, Kent, December* 8.

P.S.—As an addenda to the notice of bees in Hyde Park, on page 488 last week, you might print the following from the *Daily Chronicle* of the 7th inst.:—"London students of natural history will learn with interest that a hive of bees has been living for some time past in Goulston-street, one of the densest parts of Whitechapel, and that yesterday afternoon a bat was seen flying near Covent Garden Market."—E. E. S.

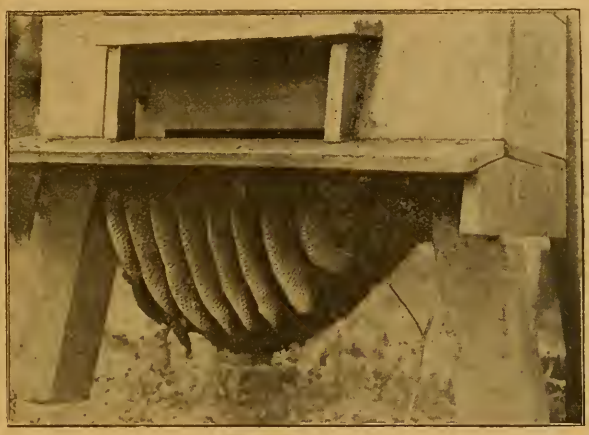
QUEEN INTRODUCTION.

[3855.] Having introduced some dozens of alien queens during the last three years, perhaps I may be allowed to make a few remarks based upon my own experience. Years ago, in the late sixties and early seventies, I used to introduce by the caging method, and more than once on releasing a queen after forty-eight hours, had to rescue her from attack. On resuming bee-keeping, I wanted to return to my old love, the Ligurian bee; the first queen I released was attacked—it was in August—and she was rescued with difficulty, in fact, she flew off the comb when the "ball" of bees was smoked, but returned to it almost immediately. The next queen died in the cage; then, with some misgivings, I tried Simmins' direct introduction method, and on no account would I return to the caging plan. I have only lost one queen out of many, and that was my own fault, or, rather, through my want of complete experience of the method, and I ran her in too soon. Let me explain: In summer, when things are in full swing, plenty of brood and honey coming in, a queen may be safely run in the same day. I have removed a queen as late as 2 p.m. and introduced a fresh one at 9 p.m. But when the honey flow is over and brood scanty, as in the autumn, more caution is required, and here is where judgment is necessary, as no hard and fast rule can be laid down, except that the less brood, the fewer young bees, and the later in the season, the longer must be the interval between removing one queen and introducing a stranger. Two or three days may be allowed, and I have always found the latter suffice in any case. One caution, however, is needed: very late in the season great care must be taken that all queen cells are destroyed when the hive is opened, as it should be, forty-eight or seventy-two hours after running the alien in, to see if she has been accepted, as in late autumn the bees do not always tear the cells down. I have found it a good plan, on receiving a travelled queen, to take her from her attendants and place her in a clean travelling cage with some young bees from the hive she is intended for, if she has to be kept a day or two before introduction, putting it under the quilt for warmth.—ALPHA, *Hull, December* 8.

WHERE DO TRUANT SWARMS GO?

[3856.] The thought must often have occurred to bee-keepers—"What happens to swarms that get away and are never found or hived?" especially to those of the craft whose business takes them from home and hives through the swarming hours. I know what it is to be greeted thus: "Oh, daddy, there was *such* a big swarm, but it went right away; we don't know where it's gone!" which information I receive with the resolution not to work the hives at high pressure to get good looking sections any longer—which said resolution never gets carried out. Last season I had been from home for five days, and on the first day of my absence a swarm had gone. Sunday morning, with leisure to look round, showed me that a swarm had found itself a

shelter beneath the floor-board of a hive in the orchard, and had been busy comb-building there. Not wanting to increase my stocks I thought it a good opportunity to observe what happened to a swarm left to themselves. The floor-board of the hive was 22 in. square, having a fillet 3 in. deep on three sides, an alighting board 4 in. wide on the front, and standing on four splayed legs a foot high. The bees of the truant swarm were therefore sheltered from the weather. The hive in question stood facing the south, and was occupied by a fairly strong stock working for extracted honey. The first point I noticed was the complete amiability of the two colonies—the swarm below and the stock above both working busily without the least friction, though the bees in the basement made frequent use of the alighting board. The combs were built from south to north, and at the end of the season there were ten combs, the largest being 8 in. deep by 18 in. long, deepest about 2 in. from the south front and tapering from there to nothing at the back. The honey gathered was all stored in the centre of the swarm, close up to the top, out of reach of marauders, and during the warm weather pollen and brood were to be seen down to the bottom edges of the centre combs. I noticed more comb was built than was actually needed either for storage or rearing purposes. I think it gave shelter to the outside seams of bees at night. The swarm throve and did well until the weather broke, and when the losses were no longer made up by the number of bees hatching out, I expected to see robbing; but no, they never left any honey exposed, so strangers left them alone. At last the time came when the stock above them needed attention, and so, after removing all surplus, the stock was shifted to enable me to turn up the floor-board and drive my interesting swarm into a skep. They were then joined to a queenless lot, with whom they settled down and wintered well. The combs, when cut from the board, weighed about 8½ lb., the honey being of good quality.



A TRUANT SWARM.

In the photo I send the brood can be seen where the bees have been smoked back in order to expose the combs.—AN ESSEX BEE-KEEPER, *December* 8.

FOOD VALUE OF HONEY.

ITS ADULTERATION AND ANALYSES.

(*Concluded from page* 481.)

Honey as Food.—When we regard honey as food, of course we recognise that it occupies the same position as sugar or any other soluble carbohydrate.

I have been much interested in what I have heard to-night about honey as a food, especially in the comparisons made between honey and butter. I have not time to give the analyses of honey in comparison with other food, as I had intended. While honey may supply the place of starch or butter in the animal economy, it cannot supply the place of protein. Therefore, honey and meat cannot be compared as articles of diet, since they belong to entirely different classes of foods. Man can live by bread alone, although the Good Book says he cannot.

Honey can supply heat and support energy, but it cannot nourish tissues containing nitrogen, without the help of some other kinds of nourishment, as, for instance, eggs, beans, lean meat, milk and bread.

It is very properly said that honey is one of the most easily digested foods of any class. If we eat starch it must first be converted into sugar before it undergoes the final processes of digestion. While starch is just as nourishing as honey, it must first undergo this preliminary fermentation before it becomes useful as a food.

A soldier must have something to eat on the march, something concentrated and quickly assimilable. While he is not nourished by sugar alone, yet sugar or honey furnishes a condensed emergency ration of the greatest value.

Among rice-eating nations, the Chinese and Japanese, for instance, can endure long working hours without fatigue. This shows that a food very rich in carbohydrate can support muscular vigour.

The pusher of the jinriksha will go longer distances than maay a flesh-eating labourer could possibly cover. Rice is a nourishing food, because it supplies carbohydrates. Honey is a food of a similar kind.

I will admit that to many people honey is a luxury. We can buy sugar that contains no

water for five cents a pound. Honey contains water—we do not care to pay for water, which is not regarded as a food of commercial importance. Sugar has made sweets so cheap that honey is not in so great demand as formerly, and yet honey is so cheap that it can no longer be regarded as a luxury.

When I was a young man, and trying to get a little education, I was anxious to get into Switzerland, not so much to get learning, but to get honey. But what I got there was American glucose. I did not see a bee-hive while there. If you have a variety of bees that can make honey out of snow, take them to Switzerland; they would find there an inexhaustible supply of the raw material.

It is surprising what a rich country we have—what an amount of luxuries we have! Most of us can afford to have honey for breakfast, and we would all be healthier if we would eat more honey and less meat at our matutinal meals.

It is a rare thing to find honey on a hotel table, and if you do, it's glucose!

I will dwell only a few minutes on the third part of my subject, and that is the adulteration of honey. I can add nothing to the remarks that have been made on this subject, but it is an important one. If we could stop the adulterations there would be no trouble in getting a good price for our honey, and people would eat far greater quantities of it did they feel certain that it was genuine.

Butter has no more right in the market than oleomargarine, but oleomargarine has no right on the market as butter. If I were going on a distant journey I would take oleomargarine, for it is harder than butter, and would keep better. But when I buy butter I do not want to buy oleomargarine. When I buy honey I do not want to buy glucose.

I have heard speeches against food adulterations that have done more harm than good, because of their intemperate statements. I was once asked, "What is the extent of the adulterations of food? I answered, "It is difficult to give the exact figures, but I think at some time or other, and in some country or other, about 90 per cent. of all human foods have been adulterated. But the actual existing amount of adulteration is probably less than 5 per cent." Well, the newspapers reported that Dr. Wiley had stated that 90 per cent of all foods on the market were adulterated. Well, that alleged statement was "sweeter than honey" to Germany and France. It was copied in all the trade and agrarian journals of those countries as a reason for excluding American food products from their markets. On any other subject extravagant statements do more harm than good.

I hope to see the day when we shall have a national law and State laws, regulating the manufacture and sale of adulterated foods; when concealed adulterations of food products will be a criminal offence, and the "little strength" we have now in that direction be grown into a national power, protecting industry and securing honest markets for its fruits. In the present condition of affairs one cannot be certain of the composition of the many attractive dishes a well-spread table offers him. He hesitates before partaking of the feast, no matter how tempting the scene may be.—*American Bee Journal.*

Queries and Replies.

[2311.] *Selecting Drones for Queen-mating.*—I should be very pleased to hear through your valuable columns your opinions of the following:—1. When wishing to have pure Carniolan queens fertilised with similar drones from same hive what would be a safe distance for that hive to be placed from hives containing other races of bees, so as to avoid possibility of queens being fertilised by wrong drones? 2. Is it beneficial to trap all drones from hives when the object in view is honey-gathering? and, if so, which is the best kind of trap? 3. Is drone-cell foundation preferable to that with worker-cells for shallow-frames over excluder zinc? 4. Is there any advantage to be gained by using extra wide shallow-frames? 5. If all worker cell foundation is used in brood-chamber, is there any likelihood of having too many drones in a hive? The Guide Book states that the "bees get their disposition from the drone." If so, which cross would be preferable for *disposition and honey-getting*, a Carniolan queen crossed by English drones, or *vice versâ?*—E. Glossop, *Ambergate, December* 9.

Reply.—1. It is not advisable to take any steps in this direction unless you can ensure there being no other drones within a two miles radius. 2. Drones may be got rid of with advantage if they number more than a hundred or so in one hive. There are many drone-traps on the market, apply to one of our advertisers. 3. Most bee-keepers prefer foundation with worker cells, but others choose drone cell. It is mainly a matter of preference. 4. None beyond securing more honey in each frame when filled. 5. Our own choice is for black queens crossed by Carniolan drones.

[2312.] *Distance Apart for Placing Hives.*—1. What is the most suitable space to leave between hives placed in a long row, due regard being given to economy of space and comfort of manipulation? 2. When is the best time of the year to rearrange the position of any hives, and how much per day may they be moved with safety?—Clumber Spaniel, *Andover, December* 6.

Reply.—1. Our own preference is to have hives placed 6 ft. apart, with 3 ft. clear space in rear. Some years ago, however, when

working with a row of fifteen hives so placed, a second row stood with their backs close to a hedge, with entrances midway between those of the front row. These latter were manipulated from the side. 2. If the change of position is made after a long spell of cold—during which the bees remain indoors—the hives may be moved at one lift with little or no loss. It may be well, however, to make some improvised change in the appearance of the hive entrances, after moving, so that the bees may notice the new location.

METEOROLOGICAL

OBSERVATIONS TAKEN AT KETTON, STAMFORD, RUTLAND, FOR THE WEEK ENDING DEC. 9, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.	Wind.
Dec. 3..	30·43	28·2	43	24	19	33·9	·05	SW
,, 4..	30·14	43·2	52	28	24	40·5	·08	SW
,, 5..	30·07	47·1	49	43	6	46·0	·25	NW
,, 6..	29·88	46·5	53	46	7	49·6	·05	NW
,, 7..	29·58	41·1	46	40	6	43·5	—	S
,, 8..	29·84	32·0	36	30	6	33·5	—	N
,, 9..	30·17	30·0	36	28	8	32·2	—	NE
Means ..	30·02	38·3	45·0	34·1	10 9	39·8	·43*	—

* Total, ·43 in.

Mean vapour tension, 0·213 in.; mean relative humidity, 87 per cent.; mean temp. of the dew point, 35°·3. The rainfall, viz., ·43 in., =9,727·89 gallons, or 43·43 tons to the acre, or 2·15 lb. to the square foot. For the week ending December 2 the mean temp., viz., 45°·2, was + 4°·7, and the rainfall, viz., ·05 in., was —·63 in. The mean temp., November 5 to December 2, viz., 44°·9, is + 3°·0, and the rainfall, viz., ·65 in., is 1·93 in.

FRED. COVENTRY.

The Vale, Ketton, Stamford, December 10.

BEES OR HONEY.

WHICH, IN SPRING MANAGEMENT?

If I were allowed to construe the above title according to my own ideas, I would have it read as follows: Should the bee-keeper's spring management be along the line of securing a large force of bees at the "expense of honey," or *vice versa?* If this, then, is a proper interpretation of the title, I would unhesitatingly answer, "Bees, bees—first, last, and all the time!" It would be just as consistent for the dairyman to expect the production of a large quantity of butter without first securing the cows, and the poultryman eggs without first having the fowls, as that the bee-keeper could expect a large crop of surplus honey without first securing a large force of workers to gather the nectar from the flowers.

Knowing, as we do, that the inventive genius of man has not yet devised any means by which the nectar can be extracted from the blossoms, stored in our hives, and transmuted into honey without the intervention of the busy bee, it follows as a natural consequence that we are still dependent upon the bees to carry out this important work. This, then, being the case, it follows that our prime object in spring management should be the securing of a large working force of the proper age before the main honey harvest opens. If, then, we agree on this point—and I feel confident there can be but one opinion in regard to it—it also follows that this important object in spring management can only be secured at the "expense of honey."

My paper is before an intelligent body of practical bee-keepers, who are cognisant of the fact that though a hive may be well filled with bees that have come through the winter safely, and though there may be a ten-dollar queen in that hive—yes, and though every other requirement has been successfully met—yet, if there is not a continual supply of honey and larval food, slow progress in brood-rearing must be made in that hive. Not only is it enough to *know* that there is a sufficiency of food, but we should also know that it is in a proper condition and in a convenient position.

There are invariably days in early spring-time, and sometimes several in succession, when the bees are unable to gather from the outside; and if at such times there should be considerable brood in the hive (in different stages of development), I would consider even a liberal quantity of sealed honey in the hive as being in a very improper condition for the most profitable advancement in brood-rearing.

Experienced bee-keepers know well the difference in a colony where the supply of liquid honey surrounding the brood has been continuous, and one where famine has at times existed even with sealed honey in the hive. In the former the larvæ will be found a pearly white, and fairly swimming in the food that has been supplied them; while in the latter the brood will be found destitute of food, of a deathly yellow colour, and destined to develop into a sickly and short-lived generation, if, indeed, they ever mature, and will be found of very little value as honey-gatherers.

Many experiments have been conducted by men of extensive apicultural knowledge, with the object in view of stimulating the queen to greater activity in egg-production early in the season; and various have been the methods that have been outlined for the accomplishment of this object. But, so far as my limited observations have directed me, I am forced to the conclusion that any manipulation of the brood-chamber that will cause the bees to move their honey from place to place, will bring greater results in *that* direction than anything that has come to my notice. And the uncapping of honey, when such exists in

the hive, is, to my mind, one of the very best methods that can be adopted for the enforcement of that object.

It is, of course, clear to the mind of every bee-keeper worthy of the name that there are a great many requirements that must be met for the greatest possible advancement in brood-rearing, apart from keeping up the food supply. But I have a firm conviction that there are a great number of honey-producers who could so vastly improve on their spring management in this direction that the difference in results when the main honey harvest arrives would be obviously apparent to even the most sceptical.

I would, then, not only advocate the uncapping of honey that may be in the brood-chamber, but I would go further and say that any bee-keeper who is alive to his own interest, and that of his bees, should always be in such a position that he could at any time supply his colonies with combs of sealed honey —outside of a division-board—after brood-rearing has once commenced and the sealed honey has been exhausted, or when the bees are prevented from any cause whatever from bringing in a sufficient supply from the fields for the encouragement of the extension of the brood-nest.

Yes, I am persuaded to go still further, and say that in my opinion I would consider it prudence on the part of the honey-producers if they would so manage as to have the dark and inferior honey—a certain amount of which most localities furnish before the white flow sets in—stored in frames of such a size that they could be inserted in the brood-chamber early in the spring of the following year—first uncapping them—for the encouragement of brood-rearing. By this management we not only keep an article off the market which will always have a tendency to injure the reputation of good honey, but we utilise it ourselves, and actually trade it off for bees early in the season, the great advantage of which I am sure no one will for a moment question. By this method we are also able to keep a considerable number of partly worn-out workers in the hive, where they are of immense value in keeping up the required temperature during unpropitious weather, when their lives would be endangered by wandering out, and yet brood-rearing goes on apace.

There is one important point that I wish to refer to, and it is this : Any manipulation in the hive that has for its object the moving of honey by the bees will likely carry with it the spreading of brood to some extent—an operation which the novice will always do well to fight shy of, and one which even the expert will only attempt with caution and the exercise of good judgment ; but if it is discreetly entered into and judiciously carried out it will result in a manifest advantage to the colony, and the ultimate fattening of the purse of the operator.—D. W. Heise, *American Bee Journal.*

Notices to Correspondents & Inquirers.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

Enquirer (Herts).—*Starting Bee-keeping.*—1. The hive mentioned will no doubt answer its purpose and be cheap at the price, but when you ask if it "is fully up to date, with all the latest improvements," we cannot think that the maker claims more for a "cottager's hive, costing 8s. 6d.," than that it will do very well for housing bees safely and for securing surplus honey. 2. The best position for hives is facing S.E., with clear flight room in front.

Rex (Bridgnorth).—*Quality of Honey.*—The sample is so completely out of "condition" that it is hardly worth while trying to estimate seriatim its "flavour, purity, condition, value," &c. The sample has been of moderate quality, but it is now so rapidly fermenting as to be unsuitable for table use.

A. H. (Wick, N.B.).—*Lantern Slides on Bee-keeping.*—Reference to our prepaid advertisement columns will show where these may be had. Messrs. Newton, Fleet-street, E.C. ; Baker, High Holborn, W.C. ; and York & Co., Lancaster-road, Notting Hill, London, also publish lantern slides on bees and bee-keeping.

G. A. Barnes (Pickering, Yorks).—Mr. R. F. Holterman's book (referred to on page 457 of our issue for November 16) can be had only from the author, Brantford, Canada. The price is five cents, but it is a question whether penny stamps would be taken in payment. However, you could write Mr. Hotterman, enclosing three stamps for the book, and it is probable it would be sent post free for its return, bearing in mind that the penny post is now established between this country and Canada.

M. Hider (Tunbridge Wells). — *Zinc for Covering Hive Roofs.*—The actual trade number or "gauge" of zinc most suitable for covering roofs is not of great importance so long as the metal is sufficiently thin to be easily bent over the edges. If the use to which it is to be put is explained, any tradesman would supply the right kind. The edges should be bent over so as to turn up half an inch on the under side of roof-eaves, and be secured by small tacks.

T. R. Wall (Rowsley).—*Dilatory Appliance Dealers.*—According to the statement sent you have been very badly dealt with, but with regard to the advice you ask from us, we can do no more than recommend the County Court as a useful place for enforcing either the return of your money or delivery of the goods ordered. We regret equally with yourself such treatment as you describe, and although we refrain from publishing names, we add a line to say that the name of firm referred to does not now appear in our advertising columns.

Editorial, Notices, &c.

BUYING AND SELLING HONEY.

The mention by our correspondent, the Rev. G. F. Oldham, last week of defaulting honey buyers (p. 491) has called forth a complaint from another victim to what is evidently a "long firm" transaction, *vide* p. 502. These communications—along with a letter received by us a short time ago, giving details similar in character, and equally unfortunate to the writer—tend to make it plain that the unscrupulous and disreputable class of individuals who constitute the shady co-partnerships referred to find a ready market for bee-produce costing them little more than the sacrifice of their honesty. But with every desire to put down fraud and protect the pockets of readers, it behoves us to be cautious in publishing names, even where the bare facts would—to the non-legal mind—seem to involve no possible risk of being construed as libellous. The imperative need for such caution must, therefore, be our excuse for either omitting names and addresses, no matter how culpable the persons implicated may be, or otherwise not publishing the charges at all.

On the other hand, letters couched in terms similar to those used by Mr. Cameron on p. 502 serve the purpose intended so far as regards putting bee-keepers on their guard against fraud, and if names, &c., are sent to us "in confidence," we may be enabled to render further help, while avoiding all such risks of legal proceedings as we are quite sure our correspondents have no desire to saddle us with.

While on the subject of buying and selling honey by advertisement, we may offer a word of advice to those who are now complaining of difficulty in finding a market. Without for a moment including all who are so placed under this head, there are, no doubt, a great many bee-keepers who either themselves advertise or else hope to transact business with those who do, and yet are not half sufficiently careful in preparing their produce for market, or in packing it for transit to buyers. We say this after having abundant evidence of the truth of our assertion in the samples and packages of honey received at this office from time to time. In fact, personal experience, far more extensive than most readers are aware of, tends to confirm our view that a great many bee-keepers are lamentably deficient in the qualities which go to make a successful honey-producer from the business standpoint. Their ideas of preparing produce for market savour too much of the old skep days, when the section and the honey-extractor were unknown, and they can hardly be brought to understand that scrupulous cleanliness, and what we may be allowed to call "toothsomeness," are indispensable nowadays in preparing honey for a favourable market. Not only so, but on the question of safe packing the same business inaptitude is discernible. We rarely have a package of honey sent here by a successful bee-man that does not bear upon its face plain and attractive evidence that the sender knows exactly where "business" comes in. Our best men in the craft can, and do, send tons of honey by rail practically without breakage or disfigurement, while the samples of those whose honey "won't sell" too often show just as plainly "the reason why."

In a letter before us, dated the 14th inst., from a tradesman who deals in honey, he says:—"In response to my recent advertisement in your pages, I had several tons of honey offered me, and I purpose in a future communication to refer to the very unsatisfactory manner in which many of the samples sent were put up." Now if a tradesman buys from "samples" it goes without saying that such as are described as above by the receiver will stand no chance whatever of being selected; the earlier, therefore, that careless bee-keepers realise this self-evident fact, the sooner will the difficulties of selling be reduced.

If further illustration were needed, it appears in a recent correspondence in the columns of the *Standard*, wherein our good friend and correspondent, the Rev. A. H. Delap, of Strabane Rectory, has done a good turn for Irish bee-keepers by the publicity accorded to his letter on the excellent quality of honey from co. Donegal. In response to the rev. gentleman's appeal, and his offer to supply honey equal to that from the famed "Mount Hymettus" (where no honey is gathered, we are told), many people sent orders, which same orders were passed on to various bee-keepers in the county for filling and forwarding to the respective purchasers. In due course it appears that some arrived all right and pleased buyers, while other parcels reached their destination all wrong, with an opposite result, and some failed to arrive at all; the final outcome being that the rev. gentleman found himself metaphorically blessed or cursed, according, as it seems, to the aptitude or otherwise of the particular bee-keeper in whose hands the order was placed.

The letters in the *Standard* have so distinct a bearing on the point we desire to enforce that we append extracts from a few as telling their own tale better than we can. It is, however, not a little amusing to note that all are headed "Mount Hymettus Honey," though how it comes to be gathered in co. Donegal the various "deponents sayeth not."

MOUNT HYMETTUS HONEY.

To the Editor of the Standard.

SIR,—Having read in the *Standard* a letter from the Rev. A. Delap, of Strabane, recommending the honey of Donegal, and offering to send parcels of it by post, care-

fully packed, I ordered three pounds, and have just received a broken and sticky mass of wood, comb, paper, and string, out of which I have scraped one pound of honey. The sections had been sent off wrapped up in a piece of paper, and, although the Post Office had done its best by adding two fresh paper wrappings on the way, the honey naturally had run out, and must have left a sticky trail from Donegal to Surrey.

For the sake of the Post Office, may I ask you to publish this letter? If Mr. Delap wishes to encourage the honey industry in Ireland, I should suggest that the packing should be more carefully attended to.

A. A. L.

SIR,—I hope "A. A. L.'s" experience is unique. I received eighteen one pound sections of this delicious honey from Ireland three days ago in perfect condition, each section carefully wrapped in oiled paper and packed in hay in a deal box; the cost of the carriage from the west of Ireland was only one shilling and sixpence by train. The honey has an excellent flavour.

Your correspondent "W. A. B." will, I am confident, receive his honey in due time, as I have mine. C. S. WILLS.

SIR,—Like "A. A. L.," I, too, wrote Rev. A. Delap, Strabane, many weeks ago, and sent postal order two shillings and sixpence. After a fortnight wrote again to ask why I never heard or received acknowledgment? Reply came, he would return money if I wished, but orders so numerous I must wait my turn! I am still waiting, and suppose about Christmas (!) it will come.

If the honey industry there is to prosper it should be in more capable hands than that of the Rev. A. Delap. This is not mere sentiment, but business, and business should be carried out in a less haphazard fashion. It is simply doing harm to the people and cause he advocates. RECTOR.

Somersetshire.

SIR,—In justice to the Rev. Alex. Delap, I wish to give my experience. I wrote to him for six pounds of honey, enclosing postal orders. The honey was promptly sent, carefully packed, and the best I ever tasted.

FRANCES A. CHAUNEY.

SIR,—Your correspondent, "A. A. L.," is more fortunate than myself, in that he has received some honey. My five-shilling postal order has produced none! W. A. B.

SIR,—If recipients of damaged honey packets, instead of writing anonymously, would sign their names, or give addresses, or communicate direct with me, I would either procure a fresh parcel properly packed to be sent them, or, if preferred, their money would be refunded. I was able to trace "A. A. L.," and have written to her making this offer. In all the hundreds of letters I have received no order for three pounds from initials "A. L. E." Will he, or she, please write direct? "E. Y. T.," order one pound, I cannot trace, as so many with possible initials, such as "E. J. T." and "E. T." have ordered that amount.

ALEX. H. DELAP.

Strabane, December 9.

A CORRECTION.

Referring to our senior editor's article on "The Crystallisation of Beeswax," which appeared in B.J. of November 9, Mr. Cowan writes from California drawing our attention to the entire omission of several words from the original. The passage in question occurs twenty lines from top of right-hand column on page 441, and was written thus:—"Mr. Tegetmeir many years ago carried out a series of experiments by inserting flat parallel-*sided blocks of wax in a hive, and the bees usually began excavating the* cells, adding the excavated wax to the margin so as to constitute a cylindrical cell."

The whole of the words which we have underlined being left out, the sentence becomes—as Mr. Cowan justly observes—"nonsense." We should have taken some measure of blame for the *lapsus* but for the fact of our having read the "copy" (which was type-written) very carefully before handing it over to printers; and, in consequence, we did not trouble to go over the words again when "passing" pages for press. Anyway, it is very satisfactory to see the printer's error corrected, and to know that those responsible regret its having occurred.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

**** In order to facilitate reference, Correspondents, when speaking of any letter or query previously inserted, will oblige by mentioning the number of the letter, as well as the page on which it appears.*

BEE NOTES FROM ESSEX.

[3857] I agree with Mr. Woodley in "Notes by the Way" last week, page 490, that the statement of Mr. Hooker—so far as awarding prizes for good management is concerned—may be taken as possibly implying that produce of good quality is the result of good management; but Mr. Hooker's words, as reported, certainly did not convey this meaning.

Mice About Hives.—We have had quite a plague of mice here since mid-summer, and

they have played a new part as enemies of bees this year. Underneath every hive which had an ordinary box for a stand I found in early autumn with a mouse nest and hundreds of partly-eaten bees. I have known mice to consume a good many bees as food in the dead of winter, but never before has this occurred in summer or autumn when bees are always more or less active. One day in the early autumn I found a mouse lying dead under the entrance to one of my hives with the appearance of having been killed by the bees. On another day I frightened a mouse off the flight-board of a hive.

During this autumn a couple of boys from London were staying a few miles from here, and having entered an orchard one day, they —London boy like—began to satisfy their curiosity as to what the dog-kennel like things that they found there were used for, with the result that the bees had "a little bit off the top," and the boys had—temporarily, at least—a very considerable addition to their "tops." We like to see dwellers in the stuffy metropolis come out and enjoy themselves in a reasonable way, but too often they take French leave and go "looting;" therefore, when results follow, as in the case of these boys, we enjoy it from another standpoint, viz., that of seeing "the biters bitten."

The compliments of the Season to our editors and all connected with the B.B.J., not forgetting the printers, to whom I am sure I often give a good deal of trouble, and to all readers.—W. Loveday, *Hatfield Heath, Harlow, Essex, December* 18.

A CONVENIENT BEE-TREE.

COMB-HONEY HANDY WHEN WANTED.

[3858.] It may possess interest for B.J. readers to say that I know of a tree now standing which has been occupied by a colony of bees for several years past. I do not mean to say there is anything very novel in this, but the owner of the tree referred to "works" the bees located in it on a plan not generally followed; in fact, he first cut a good-sized hole in the tree so as to lay bare the combs, and by means of his pipe the bees were smoked off and several slabs of honey cut out and appropriated. This done, the opening was covered by a sack nailed on, and the bees left to repair the loss as best they could. They got on very well, and the owner for several years has in summer helped himself to honeycomb as wanted as before, and covers up his "honey cupboard" by again replacing the sack. It should be said that the bee-entrance in the tree is not exposed to public gaze, but faces inwards towards the owner's garden.

This is a case of bees supplying their owner with honey for home use and providing their own home-made hive without asking for any syrup-feeding in return.

My own "honey take" for 1899 has been very good, the best result coming from a ten-frame hive, which yielded 185 1-lb. sections. Several other hives produced about 130 sections. I am wintering sixty stocks, all of which are in good condition, *i.e.*, strong in bees and well-stored for winter. Wishing one and all a prosperous year in 1900.—H. Seamark, *Willingham, Cambs, December* 18.

BEE-KEEPING IN SHROPSHIRE.

[3859.] As it is now a considerable time since I contributed an "Echo" from this district, perhaps a brief report of the bees and their doings may not be altogether unacceptable.

In the spring, owing largely to an extremely mild winter, stocks both in frame-hives and skeps came out all right as regards strength, but somewhat short of stores, except where feeding had been resorted to. For about six weeks in June and July there was undoubtedly a capital honey flow, and much nectar was gathered by our little labourers. I know of novices just commencing who succeeded in removing their forty and fifty sections from a single stock—not at all bad for beginners.

Swarms were chiefly conspicuous by their absence; the owner of over a dozen colonies had only one swarm, and many in all parts of the country could not boast of having had a swarm at all. Speaking generally, it was the best season for honey in this country that we have had for many years, and I can vouch for the fact that the income from bee-keeping alone has been more than sufficient to pay the rent of small holdings whose tenants keep about a dozen hives each. To the efficient fertilisation of the apple-blossom by the bees I am strongly of opinion is due in a great measure the exceptionally heavy crop of apples this autumn. It is greatly to be regretted that the indifference and ignorance of fruit-growers is so general concerning bees, and that they cannot be induced to realise the importance of keeping bees in their orchards and plantations. I can speak from actual experience of the good results of bee-keeping in its relation to the fruit-crop not only in Shropshire, but also in the South of England—in Kent and in Sussex; and I most earnestly advise any one who has an orchard, or even a garden stocked with fruit-trees, to try as an experiment the keeping of a few stocks of *apis mellifica* under his trees.

It is well known that the adjoining county of Hereford is second only to Devonshire for its apples; and only two or three days ago I was told, as an instance of the unusually weighty yield of apples, that, within a few miles of its cathedral city, the crop of six trees alone weighed six tons, or an average of a ton per tree, for which a purchaser paid the goodly sum of £20. This is no exaggeration, and I am prepared to give the name and address of my informant if desired; but it is a

matter of common knowledge that apple trees will sometimes attain an enormous size, particularly on a rich red loamy soil, which is free from clay of any kind.

There was a spell of fine warm weather during the period of apple-blossom this summer, and this allowed the bees to freely visit and to fertilise the bloom, resulting, without a doubt, in a largely-increased harvest.

I could write much more upon this subject, as it is one of great consequence in connection with the craft of intelligent bee-keeping, but my pen has already covered much more paper that I originally intended. — J. EDMUND RODEN, *Quatford, Bridgnorth, Shropshire.*

HONEY BUYING.

MORE DEFAULTING.

[3860] Having met with a somewhat similar experience as that described by Mr. Oldham in your issue of to-day (3850, p. 491), I beg to state my case as a warning to my fellow bee-keepers.

I can give both name and address of the manager of a large firm in London who agreed to purchase 150 lb. of run honey at a given price. The business named being, as I thought, in itself a guarantee of good faith, the honey was dispatched and duly acknowledged by the manager. But the letter was not accompanied with the promised remittance. Subsequent demands for his cheque have remained unanswered, and my last application was returned this week from the Post Office with the words "gone away." Such transactions cannot be made too public — E. H. CAMERON, *Pen Nevis, Par Station, December* 14.

[3861.] The two men I wrote to you about had not advertised in your paper; but as they were defaulters, I thought you might like to have their names. Thanks to police assistance, I have got back the honey I sent to the address in Bow-lane, London, which I gave you. From Manchester, however, I have had no redress so far.

A man in Plymouth this week tried to get a cwt. of honey from me; but when I said remittance must be sent first I heard no more from him. Another man has got dairy produce from a poor widow here to the amount of £3 odd, of which he has cheated her.— J. R. P. (Rector), *Buckland Hilleigh, Devon.*

AUSTRALIAN HONEY YIELDS.

[3862.] I beg to enclose you an extract from the *Australasian* (an Australian paper which has a column weekly devoted to bee-keeping). I thought it may interest your readers. In the same paper appears an article by "The Drone," discussing the proposed Foul Brood Act. In this a Mr. Brickell wrote:—"I have over and over again proved that foul brood can be started in a perfectly healthy hive at any time by improper manipulation at unseasonable times, particularly in cold climates." This seems to me very extraordinary; and, again, Mr. Abram, of Beecroft:—"I do not care a rap whether we have a Foul Brood Act or not. But is foul brood the worst dreaded disease? Certainly not! Is paralysis not much worse?"

I have not yet heard of paralysis as a bee disease. I think it not probably a bee disease of this country. I should be very interested to hear your ideas touching these points.—E. SKINNER, *Frampton Cotterell, December* 11.

SOURCE OF AUSTRALIAN HONEY.

"Mr. H. T. Chalmers writes:—I desire herewith to submit some facts regarding the value of our eucalyptus from a bee-keeper's point of vision. From every section of 640 acres of ordinary box or other species of eucalyptus forest, such as is usually found throughout Victoria, there is a flow of honey which I estimate to be worth, when gathered, fully £100 per acre, with, perhaps, an occasional blank through bad seasons. With a good season, such as the one just passed, the value of honey which goes to waste is enormous. The actual facts upon which I have based my calculation are as follows: A bee-keeper of experience, settling within the area of ordinary forest land, such, for instance, as is met with up the Bendigo and north-eastern lines, will be able to gather from five to ten tons per year, and yet his bees will not work further than a radius of a mile or so. I have known 200 colonies of bees at work upon comparatively open country and gather twenty tons of honey without being seen at work more than one and a half miles from home. I have put down sixty or seventy colonies of bees and gathered six or seven tons of honey without finding the bees more than a mile from home. Some of our bee-keepers have gathered up to twenty-five tons of honey this past season. This honey has a market value in Europe of £25 to £35 per ton, which will net to the bee-keeper from £15 to £20. The value to the colony of forest land for the gathering of honey is from 2s. 6d. to 5s. per acre, at a low estimate. 'Ring-larking' has already ruined some of our bee-keepers, and will sooner or later injure the business considerably; but such loss means loss to the colony, as a depletion of natural resources."

HOMES OF THE HONEY BEE.

THE APIARIES OF OUR READERS.

Mr. Adams, whose apiary is shown on opposite page, is another representative bee-keeper of the workman class we always welcome in our ranks. Writing of himself he says:—

"My first start in bee-keeping was in 1880, when I began with one straw skep, presented to me by my late employers, for whom I for several years previous used to hive swarms

and brimstone the bees relegated to the sulphur pit as autumn came round. In the spring of 1881 I attended a lecture on bee-keeping at Emberton, three miles distant, given under the auspices of the then flourishing Bucks Bee-keepers' Association, and, my interest being aroused, I at once joined the Association. The B.B.J. was sent on to me in virtue of my membership, it being the custom then for members to send the JOURNAL on from one to the other. I do not think I have missed reading a single copy issued since, and I attribute my success in bee-keeping to following the instructions given in its pages. In the autumn of '81 I made my first frame-hive and stocked it with driven bees, and they did well, more than fulfilling my best expectations. I therefore went on making more hives and adding to the number of my colonies until my apiary extended to its present dimensions; and I am unable to make any further increase owing to want of room and time to attend to more bees. The yearly average of honey I have secured is between 30 and 40 lb. of surplus per hive, leaving the bees sufficient stores to winter on. I started the season of 1899 with seventeen stocks, and have taken 305 saleable sections and 395 lb. of extracted honey, besides leaving all colonies well supplied for wintering. I gave up feeding with syrup in autumn several years ago because of finding that it takes a lot of work off one's hands to leave the bees a good supply of their own natural stores. It also does away with the danger of robbing and its consequences. We are, perhaps, not in the best of districts here for honey, but three of my stocks gave me this year about 70 lb. of surplus each, the honey being of splendid quality. I have not done any exhibiting for several years past, being unable to spare the necessary time to attend to show-going, although when I was able to get away I managed to secure a fair share of the prizes. It is a very rare thing for me to have a swarm from my hives, for by simply giving sufficient room in advance not one stock has been tempted to swarm during the present season. As a matter of fact, I do not average one swarm in a year. I was, however, fortunate enough to capture two stray lots this year, these being the first stray swarms I have ever come across. The early part of the season was very unpromising, here, but, fortunately, we have close at hand the beautiful avenues of limes, where the poet Cowper used to enjoy his walks, and I have never known the bees bring in so much honey from them before. I find very little trouble in disposing of my produce, for if I have any left, after supplying my regular customers, I either answer an advertisement or advertise in our BEE JOURNAL, and the latter course soon brings a customer. I see there has been some controversy in the B.J. lately about working sections under shallow-frames. I have tried it for the first time this season, when on one of my hives being short of frames for storing in, I placed a rack of sections below, when the shallow-frames of comb began to be sealed over. About fourteen days later, the frames

MR. C. ADAMS'S APIARY, WESTON UNDERWOOD, OLNEY, BUCKS.

being all full and sealed, I extracted their contents, and then, on placing them beneath the sections, I found quite half of the latter sealed, and ready to take off. The final result from that hive was forty full shallow-frames and eighteen good sections. This was one of my best returns, and I shall certainly try the plan again. In all my experience, I have never seen a queen 'balled,' and I think if bee-keepers would interfere less with their bees in the spring and autumn, we should hear less of 'balling.'

"After finishing all the extracting needed for the season, I go round the hives and remove all frames not covered with bees. I then cover all up warm and snug, and leave the bees entirely alone till the end of March or beginning of April in the following year, or until the weather is sufficiently warm to examine the hives with safety to brood and bees. I leave re-queening alone, unless I happen to get a vicious lot, or a queen not up to the mark, in which case I remove the queen in autumn, and join to the stock a lot of driven bees with a young queen. You will observe by the photo that the hives are, perhaps, not so showy as bought ones, but they answer my purpose quite as well. The figure seen is that of your humble servant.

"In conclusion, and referring to my not having time to enlarge my apiary, let me say that, besides being employed as groom and gardener, I am a member of the Parish Council, Secretary of the Village Sick Benefit Society, Secretary of the Village Band, member of the Church Choir, and also of the St. John's Ambulance Association, and, until lately, I also had the management of the Technical classes in the village, but was compelled to give it up for want of time."

TEACHING BEE-KEEPING IN SCHOOLS.

A HIVE OF BEES AS TEXT-BOOK.

Stop and think for a moment what the world really is, and for what purpose we are in it. At bottom, nature is a vast system of tremendous forces at work night and day; and from the word go, in the first chapter of Genesis, man has been set the delightful, interesting, and inspiring task of learning to control all these forces to produce the greatest possible good for the greatest number. Stop and think again how much of the veritable reality of this great plan of nature, and how much of the fundamental purpose of human life, becomes an actual part of our great public-school system. We scoff at "book larnin'," and clearly recognise that learning to repeat words from books can never make men who are able to do anything worth while in the world. Then stop and think once more: "How much besides book learning do we have in our schools?"

Our great hope of escape from this bookish talky-talky farce of an education lies in the line of modern nature study. Here we may have children learning things instead of words, and things that are worth their while. But to the point. Let us first consider ways of managing bees in a school-room, and then we may indicate a few of the important lessons which they may be used to teach.

I have tried the ordinary observation hives, both single-frame and full-stand, such as are used at fairs and exhibitions, and also a honey-section covered with a glass box, and a glass hive specially made for the purpose, which I will describe later.

For an entire season I had a honey-section hive in my study window, and the whole time it was the most fascinating thing in the room. It was made from an ordinary pound section by driving brads into the corners, letting them stick out ½ in. at the bottom for it to stand on, and ¼ in. from the sides and top to insure a bee-space all around. The glass case that fitted over it was made simply by cutting glass the proper size, gluing the corners together with narrow strips of cotton cloth, and carefully searing hot beeswax into the corners on the inside to prevent the moisture of the bees from softening the glue. To stock it I put in a handful of bees with an old queen which I wished to supersede. She laid the little hive full of eggs, and then decamped. The bees immediately set to work making queen-cells; and, happening to be cutting out a lot, I put in two large queen-cells—one of them, with malice aforethought, protected with screen wire.

The queen from the unprotected cell emerged first, and then I had the whole story of "piping" and "quahking" where every movement could be easily observed. At noon of the second day after piping began, the hive cast a swarm, which clustered about the size of a spool of thread in the snowball bush in front of the window. I hived it back, removing the offending quahker, and the young queen stayed, and laid, and kept up the hive until cold weather. I saw her take her nuptial flight. She was gone about ten minutes, and returned with the organs of the drone. Within fifteen minutes after the bees had removed these she flew again, and in five minutes returned with a second trophy of success. Almost any day I could see a little bee emerge and make its first toilet—a most fascinating performance, and at all times I could observe the bringing-in and disposal of honey and pollen. I painted bees with different colours, and watched them work from daylight to dark—that is, I watched them from daylight to dark; but no single bee that I watched ever worked more than three and a half hours a day. Then there were all the different divisions of labour—the field-bees, the nurse-bees, the wax-producers, the police, the barbers, the drones, and the queen.

I mention all these things to show how many interesting points in the natural history of the

hive can be intelligently observed and studied in so small a device—an old honey-section, a handful of bees, a discarded queen-cell, and a few scraps of broken glass, all of which need not cost a penny. And I will guarantee that it will be worth more to a roomful of children than 10 dols. worth of books about natural history; but, of course, we need some books as well. And with all that has been written, not half the whole story of the hive has ever been told.

The next season I had in my window the little hive again, and a hive made to take one of my regular frames. The glass case for this was made in the same way, except that the front glass was left out; *i.e.*, the sides, top, and back were glass, fastened together with glue and narrow strips of cloth. This fitted into grooves cut in the bottom-board and in front into the front board, an upright post very securely fastened to the bottom-board. The entrance-hole was made in the bottom of this front board. Sharpened wire nails with the heads cut off, and filed to a sharp edge, driven into the bottom and front boards held the single frame securely in position independently of any support from the glass. Both these hives were covered with thick cotton quilts made with soft black woollen cloth. This hive is naturally more satisfactory in many ways than the little one, since we can observe things on a much larger scale. We need never wait ten minutes to see a young bee gnawing her way out. We may observe a great many more workers about their different vocations, and the queen can very generally be found laying. Still, this outfit will cost, at the lowest estimate, from 1 dol. to 2 dols. Yet a man who had an apiary, or one of the boys in his family, could put such an outfit into a school for a few weeks at a cost scarcely exceeding temporary use of the glass and bees.

Of course, the best thing of all is a full stand, and a booming large one, in an attractive and safe glass hive. With this the boys and girls may actually see and study practically the whole theory and practice of apiculture, from noting the flowers which bees visit, with the hive-products derived from each, to sampling the honey of all the different grades, and making at least the chewing test for pure beeswax.

As already stated, I have used a number of different observation hives—in all, three different styles. I will stop to describe only the one which I have found best; and on just this point suggestions from any one who has been working along this line will be most gratefully received.

The hive is made of glass sides, ends, and top, which is removable, set in a frame of inch pine. The strips that go across for the top of the ends and the bottom end strip in front are 1 in. by 2 in. at the top, to allow for rabbeting down for the frame supports $1\frac{1}{2}$ in., the bottom for a $\frac{3}{8}$-in. entrance. All around the inside the frames are rabbeted in $\frac{1}{4}$ in. by the thickness of the glass. This gives us a plain glass box all smooth on the inside. This is screwed to a bottom board, into which beeswax has been thoroughly ironed in on both sides. The bottom board is made of inch pine, and extends a foot in front of the hive, and through this extension it is screwed to the window-sill. This space between hive and window is covered in by a screen wire tunnel about 10 in. wide and $1\frac{1}{2}$ in. deep, and forms the most fascinating place to watch the outgoing and incoming streams of busy life, the different-coloured pollens, the loads of propolis and nectar, the carrying out of the dead, the most interesting "policing" of the entrance, the actions of sneaks and robbers, the reception of a strange bee, or one that has been perfumed in various ways. This space should be provided with sliding doors—one of perforated tin to close the hive, and one of tin to close the opening through the board that fits under the window-sash. This is to make it possible to confine a bee for a moment while it is being marked. For marking I have tried a number of devices, but have settled down on ordinary water-colours as the best and simplest way, and I use a fine brush that can be passed through the wire screen. It would be a desideratum, both for purposes of observation and ease in marking, if we could have a fine black wire screen with meshes as large as possible, but just small enough to prevent a bee from getting through, *i.e.*, larger meshed than the common fly-screen.

In marking bees I get a good dab of any desired colour, on the back, between the wings; another on the back of the abdomen; and, most important of all, a good mark on the very tip of the abdomen. Until I discovered the importance of this latter mark I used to lose my marked bees for hours at a time, even in a single-frame hive. I finally caught one crawling into a cell, and watched her remain there lying quietly on her back for nearly five hours—resting or asleep.

The supers are made with glass sides, glass set in narrow wood frames and wooden ends, and the glass frame for the top of the hive exactly fits over a super. The whole hive is covered with thick soft quilting, made in rectangular pieces to fit both ends and one side, the other side being covered with a long quilt which laps over the top, and is long enough to cover three supers in position. The advantage of this mode of covering is that it can always be removed without a jar or creak, leaving the bees so completely undisturbed that I have not seen any tendency on their part to propolise the inside of the glass. It is very easily manipulated, and keeps the bees warm. For winter, in a room that is not heated, I have simply to throw over a few newspapers and large sheets of wrapping paper, and tie down closely with cord. As I have all my hives under cover, I now propose making them all on this plan; but if any one can suggest

improvements, I wish he would do so before I get them all made. Materials for hive cost about 2 dols., and the bees from 3 to 8 dols., according to quality, size of swarm, and local prices. Still, it might be run to pay in honey and bees from 100 to 200 per cent. annually. A start might even be made with little or no expense to the school authorities, if some one who has bees would arrange the observation hive and manage one of his swarms, as suggested, either in the window of a schoolroom or elsewhere, where the classes could have free access to it. In fact, a bright boy I know of, who became interested in bees in the way suggested while in the grammar school, bought a swarm with his own money, and has recently volunteered to place one of his swarms in a glass hive, which he made himself, at the disposal of his classmates, now in the high school.

I have used the honey-bee thus in a large grammar school, the hive being located in an attic window; and during two seasons at the Clark University Summer School, and wherever introduced, it has proved one of the most, if not the most, fascinating part of a nature-study course. I should rather use pictures than a few dead bees—queen, drone, worker, &c.—mounted in a glass case, with a little comb, and all that; but when it comes to seeing things alive and humming, with all the bustle and hustle and go of an actual bee-hive, interest is unflagging and keen to the last. A number of the teachers have taken the suggestion home to their own schools.

Of course, the honey-bee forms a small but very important part of a nature-study course. Altogether the most important part of elementary botany, after the planting of seeds and rearing of plants, is cross-pollination of flowers, and, chiefly, how this is accomplished by insects. It is a wonderful coincidence that, among the million or more insect species, this one, so useful and beneficent, should be practically all-sufficient for this important function in nature. In a town or city, where each house has its garden and fruit-trees, I consider that one who keeps a few swarms of bees is a public benefactor, helping to supply his neighbours for a mile or more around with more and better fruit than they would otherwise receive. The class could easily test this by screening branches of apple, cherry, plum, and pear, before the blossoms open, and then counting blossoms and the fruits that set and mature, comparing these branches with others that were exposed to bees. Flowers and the production of seeds could be studied in the same way. Honey-trees and honey-plants should then receive some attention, and problems of planting parks and shade-trees with some reasonable consideration for the needs of our helpful and fascinating little friends.

In this section it is sometimes said that the basswood cannot be planted to advantage on account of borers, and the same is generally true of the honey-locust. This is because our woodpeckers especially, other birds as well, have been so neglected or killed off. Our interest in bees and honey by the natural and important inter-relations of all the different parts in the great scheme of living nature extends to an interest in certain injurious insects in tree, flower, and fruit culture, and in birds. This is but one example among many of irradiation of interest when we have really developed a warm focus of interest in some particular thing.

As a result which may appeal to bee keepers especially, we ought to have generally disseminated an intelligent knowledge of the wholesomeness of pure honey, which would increase its consumption in this country tenfold. I think the honey-bee is soon to be given a trial at teaching practically applied industry, intelligence, and thrift in our public schools. At the outset we should like to hear all the possible pros and cons that practical bee-men have to offer; and we should be especially grateful for suggestions as to the best hives and apparatus for demonstrating the life of the hive.—*Gleanings* (American).

METEOROLOGICAL

OBSERVATIONS TAKEN AT KETTON, STAMFORD, RUTLAND, FOR THE WEEK ENDING DEC. 16, 1899.

1899.	Bar. in.	Tem. 9 am deg.	Max. deg.	Min. deg.	Range deg.	Mean deg.	Rainfall, in.	Wind.
Dec. 10..	30·08	29·7	34	24	10	29·2	—	SE
,, 11..	30·03	29·7	32	28	4	30·1	·01*	NW
,, 12..	29·74	30·0	32	23	9	27·7	·19*	W
,, 13..	29·55	31·2	31	29	2	30·0	·01*	S
,, 14..	29·51	20·0	32	15	17	23·8	—	NE
,, 15..	29·79	26·1	29	19	10	24·2	·01†	NW
,, 16..	29·79	27·1	37	13	24	25·5	—	S
Means ..	29·80	28·0	32·4	21·6	10·9	27·2	·22‡	—

* Snow. † Fog. ‡ Total, ·22 in.

Mean vapour tension, 0·130 in.; mean relative humidity, 84 per cent.; mean temp. of the dew point, 23°·7. The rainfall, viz., ·22 in., =4,977·06 gallons, or 22·22 tons to the acre, or 1·10 lb. to the square foot. For the week ending December 9 the mean temp., viz., 39°·8, was + 0°·6, and the rainfall, viz, ·43 in., was −·17 in.

FRED. COVENTRY.

The Vale, Ketton, Stamford, December 17.

Echoes from the Hives.

Chichester.—The past season will long be remembered as a very dry one; in fact, the honey-yield on the south coast has been very much below the average, and not since the exceptionally wet year, 1888, can I remember so small an amount of surplus of honey gathered. The very dry weather in 1899 took all moisture out of the white clover, and not until the

second-crop of red clover came into bloom did the bees gather surplus to any extent. Just then, however, the bees began to work with a will. The lime blossom, too, about here was quite parched up with the hot sun. The bloom only lasted a few days before it turned brown and withered away. Taking the season of 1899 as a whole it has been very unsatisfactory, as regards surplus honey in our part of Sussex. Wishing all bee-keepers a prosperous New Year.—*The "D" Apiaries, Chichester, December* 14.

Queries and Replies.

[2313.] *Confining Bees when Moving* 100 *Yards.*—1. Can I with safety put perforated zinc over entrances to my hives; and, after moving them at once 100 yards, leave the zinc over entrance a fortnight? 2. If I may do this and then remove the zinc, will the bees take to their new quarters and not return to their old site? 3. I have cut off and melted down the white outsides of comb in this year's sections which contained no honey, the bees only filling the centre of their sections, and leaving empty about ½ in. round of new comb. The wax, when melted, seems of a dirty white colour. Why is this? I should have thought it would have been the best wax. 4. I have had given me a lot of unused sections (in flat), and they have small bits of comb tumbled in amongst them; the whole being mixed up with a lot of new sections. I am afraid there was foul-brood in the hives from which the bits of comb came. Would these refuse bits of comb taint the sections? I am so afraid of my bees catching the "pest." Could I put the new sections in the oven for a time to make them safe? and, if so, how long must I leave them in the oven? 5. I have also several queen excluders, very dirty with comb and propolis. This I can scrape off; and I thought of doing this and then boiling them for four or five hours. Will this make them safe from any remains of foul-brood? 6. I have just bought a stock of bees in a frame-hive, and would like to transfer the bees and combs from it into a new hive now, so that I may be able to fix and clean up their old hive for occupation next year. I would, of course, choose a sunny day for transferring the bees and combs on. 7. How can I make hanging-frame section-boxes, and what distance ought frames to hang apart?—INQUIRER, *Worcester, December* 13.

REPLY.—1 and 2. If the bees are moved after having been confined by cold weather for several weeks there will be no need for closing entrances at all when moving 100 yards. The bees will not leave their hives while weather keeps cold, and when it becomes warm the entrances must remain open to allow of their taking a cleansing flight. 3. The discolouration of wax must either come from the water in which it was melted down or from the comb itself. 4. The few particulars given are not sufficient for us to form a reliable opinion as to the danger of infection from using the section referred to; but, in any case, baking in the oven would be more likely to make the sections unfit for use than to destroy foul-brood spores, if such were present. If, therefore, you wish to be on the safe side, don't use the sections, because foul-brood spores will stand boiling for some time without destroying their vitality. 5. If boiled for the time named they will be quite safe for use. 6. Frames of comb and bees may be transferred to a new hive by an experienced hand, on a warm day, when bees are flying freely, but we do not advise beginners to try it in winter. 7. We never yet knew an amateur joiner who could make a satisfactory hanging-frame for sections, consequently we advise that such are procured from a reliable dealer. Just as you do with folding sections.

[2314.] *Wintering Weak Stocks. Requeening in Winter.*—1. I have bought a stock of bees in a frame-hive, but I find the bees are very weak, and have not much stores. I have put a 2-lb. cake of soft candy on top of frames. Will this be sufficient to carry them on to February, or must I give them some warm syrup now? 2. Should I begin to stimulate breeding at beginning of March by uncapping cells of honey, so as to build them up? 3. Is it possible to buy a queen at this time of the year for a queenless stock? And, if so, should she be introduced as advised in B.J. for December 7? 4. Next spring I wish to form a nucleus from one of my hives. If I take the queen and a couple of frames, with bees and honey and brood, can I with safety put them in a hive about five yards from their present stand, or will the bees return to their old hive? If I cannot do this, perhaps I had better only put three frames with brood, bees, &c., and leave queen with old stock. I shall be much obliged for help on this point.—QUEEN BEE, *Worcester, December* 14.

REPLY.—1. A cake of soft candy weighing 2 lb. will sustain a weak lot of bees for a couple of months in winter if the bees consume the food, but it is not certain that they will not perish for want, leaving the candy untouched. You must examine the hive to see if candy is really being used. 2. Yes, if you know how to stimulate judiciously. 3. We don't think any dealer would sell a queen at this season unless he had a small nucleus colony to part with. 4. Don't divide your hives in spring by forming nuclei at that season. To do so is bad management.

[2315.] *Requeening; Is it Advisable?*—I shall be very grateful for advice as to requeening. I started bee-keeping in 1897 with one strong stock, headed by a young queen, and, as the bees increased so much in numbers,

a bee-keeping friend advised me in 1898 to have the colony divided. This was done, and the queen given to the portion of bees put into a new hive. The old stock, after raising a new queen, sent off a swarm, which was returned to the hive. Now, with regard to the old queen, as she must be quite three years old, shall I allow the bees to supersede her? or would it be better to either introduce a new queen or cause the bees to raise one themselves? The hive is very strong in bees, and I had 70 lb. of surplus honey from it this season. I am extremely interested in bee-keeping, and anxious to succeed, and I find your JOURNAL a great help, as well as very interesting reading. Thanking you in anticipation.—A. E. G., *Shrewsbury, December* 17.

REPLY.—If the colony referred to is so strong in bees as stated, and has done so well this season, it is inadvisable to do anything by way of requeening; the probability being that the old queen has been superseded by the bees themselves. We should, at all events, watch what progress is made by the stock in building up next spring, and, if any falling off is shown compared with the stock headed by a young queen, steps might be taken to requeen the hive, but not otherwise.

FEEDING BEES IN WINTER AND SPRING.

QUESTION.—What is the best method of feeding a colony of bees that is found to be without food in the hive in mid-winter or early spring?

ANSWER.—In the first place, we should never allow our bees to be in this condition, for it is much more to our advantage, and to the advantage of the bees, to have sufficient food supplied them in the autumn to last at least till the last month of spring, and I am quite positive that if enough is given to last till June it is all the better. The prudent apiarist will look over all his colonies in October, and see that *all* are abundantly supplied till the flowers bloom again. However, should such a thing as the bees being short of stores happen, through sickness or other adverse circumstances, the very best method of feeding them is to set in combs of sealed honey, as this places the bees in a natural condition, and does not disturb them every little while, as most other methods of feeding do. If no combs of honey can be had, the next best way is to fill combs with good, thick, sugar syrup, when they are to be used the same way the combs of sealed honey would be. In either case, such combs of food should be warmed for six hours or more before being placed in the hives, for where combs of frozen honey are set next to the bees the colony is thrown into a state of excitement to warm this honey up to where they can safely cluster against it.

There is still another way of feeding in winter which I like very well, and can be used still more effectively in the spring where a colony is short of stores, where one has on hand some extracted honey which has candied, which is as follows:—

Make a bag out of cheese-cloth about six or eight inches square, after which partially fill it with the candied honey, which has previously been worked till it is quite soft, or it can be worked after it is in the bag. Don't fill the bag so but that it will assume a flat shape, for we wish to press it down right over the cluster of bees, so that it can be covered snugly with bee-quilts or old carpeting to keep in the heat. The bees will suck the feed through, and in process of time cut through the cloth so as to use it all up.

But let me repeat, that the bee-keeper who does not see that each colony has stores enough in the fall to last from October to May, is working in such a way that the word "failure" is liable sooner or later to be inscribed on his banner.—G. M. DOOLITTLE, in *American Bee Journal.*

Notices to Correspondents & Inquirers.

Letters or queries asking for addresses of manufacturers or correspondents, or where appliances can be purchased, or replies giving such information, can only be inserted as advertisements. The space devoted to letters, queries, and replies is meant for the general good of bee-keepers, and not for advertisements. We wish our Correspondents to bear in mind that, as it is necessary for us to go to press in advance of the date of issue, queries cannot always be replied to in the issue immediately following the receipt of their communications.

All queries forwarded will be attended to, and those only of personal interest will be answered in this column.

"*The Absent-Minded Beggar.*"—Referring to our observations on the subject in the B.J. last week, Mr. W. Loveday writes us to say it is not the word "beggar," as used by Mr. Kipling, to which he objects, but "the absent-mindedness" of the British soldier with regard to those he leaves behind him, as "implied" in the poem. In reply we are pleased to add that Mr. Kipling has, himself, calmed the disturbed mind of a lady correspondent, by good-naturedly giving his definition of the sense in which words are used. In thus doing, he explains that "absent-minded" is a term in common use among soldiers, and "beggar," as used in the poem, is "a generic term of endearment." We trust this will remove any further misapprehension among the few who failed to appreciate the stirring lines of the "soldier poet."

The Christmas Holidays.—In view of the fact that next week's BEE JOURNAL must be got ready for press by Saturday next, the 23rd inst., we shall be extremely obliged if correspondents will kindly forward any contribution for the final issue for 1899 so as to reach this office to-morrow, the 22nd inst.

Editorial, Notices, &c.

A YEAR CLOSING IN SHADOW.

Amid the momentous events which just now occupy the minds of all men in this country, it is difficult to fill even the small space at our disposal in this issue with anything connected with bee-craft likely to attract attention from bee-keepers. We cannot shut our eyes to the fact that everything around us, so far as regards books and all in that line coming from the printing-press, betokens interest only in scenes and events as far removed as can be from "the bee-hives' peaceful hum." In this way the times are "out of joint," as it were, with all that our readers are supposed to look for or to care for in these pages. None the less, however, we have another yearly volume of the BRITISH BEE JOURNAL to bring to a close, and the task is rendered more than usually heavy by the fact that the closing days of the year and of the nineteenth century are, for the people of this kingdom, shadowed by clouds which, though soon to roll away—as clouds always do—and be succeeded by sunshine, are still overhead as we write.

Our task to-day, therefore, involves little beyond again placing on record our grateful acknowledgments of the assistance afforded by the numerous and willing correspondents, whose contributions help to make up the fund of useful information to be found in the present volume. For ourselves we have endeavoured to steer a straight course in guiding the fortunes of the JOURNAL, and, while conscious of many shortcomings, have tried to earn the good will of all. This is not an easy task, nor do we pretend to have succeeded in accomplishing it, seeing that no one can be in several places at one and the same time. And so we must repeat our apology of last year to those who deem us guilty of neglect in attending to private correspondence on bee-matters. Did they but know how persistently bee-keepers will at times forget how many good friends we have writing and expecting private replies to their queries, no doubt considerable leniency would be shown.

In conclusion, let us hope and trust that the new year will soon become one of peace, for it is with some sadness that we wonder what becomes of the BRITISH BEE JOURNALS sent regularly every week to South Africa, where there is at present, unfortunately, no peace, and where a word of sympathy in these closing lines of our twenty-seventh volume, will have but small chance of reaching those subscribers whose "Homes of the Honey Bee" are, or were, located where war is now raging. Let us hope, too, that the end is not far distant, and that the final outcome of the terrible struggle now going on will be the securing of equal rights for all white men in that part of the world, and a full measure of justice for our darker brethren in South Africa.

Correspondence.

The Editors do not hold themselves responsible for the opinions expressed by correspondents. No notice will be taken of anonymous communications, and correspondents are requested to write on one side of the paper only and give their real names and addresses, not necessarily for publication, but as a guarantee of good faith. Illustrations should be drawn on separate pieces of paper. We do not undertake to return rejected communications.

"OLD SOL."

[3863.] The above is rather an undignified name for our good friend and benefactor, the sun, but I cannot think of a better title for the heading of a paper in which it is desired to give vent to my regard for the bee-keeper's special patron.

I pen these lines in front of a window that faces a December sunset in a cloudless sky. Though early in the afternoon, "Old Sol" is already nearing the horizon and beginning to spread a yellow evening light below and around him. His face has rarely been visible for a month past, and now that the clouds have rolled away and he shines forth in his splendour, I am filled with a pleasure that cannot express itself in words while basking in the warm rays shed so bountifully on all the world by this majestic heavenly body. I think the blessings of sunshine can only be enjoyed to the full by those who depend upon its influence for a great part of their sustenance or pleasure. Among such are we bee-keepers, and all who are interested in insect or plant life, and to these it is almost life itself. When the sun's face is obscured by the chill mists and fogs of dull November, a film of gloom creeps unconsciously over us too. Life seems to be less eventful and more humdrum than it used to be, and we long for the stirring scenes of summer days that are gone. But when the glory of a few hours of unalloyed

sunshine suddenly bursts upon us, as on this December afternoon, the reason is apparent, the gloom is instantly dispelled, and our hearts throb with delight as we welcome the reappearance of the friend who is the source of so much of our pleasure. We cannot, however help noticing, with a certain amount of regret, what a change has come over "Old Sol" since we last enjoyed his presence. He is the same staunch friend, it is true, who enabled us and our bees to unite our happy labours in ministering to one another and to others last summer, but now, alas, he is bereft of his might, and in consequence we and our little friends have had to part company for several long months. To-day the most he can do is to smile feebly, yet kindly, upon us, and promise that if we poor mortals can hold out for a few more months, he will not fail to do his part and bring us together in happiness once again in the coming summer.

The sun, judged by the light in which we regard the things of this earth, is the greatest example of stolid immutability one can see. He deviates not an atom from the fixed course pursued by him with the utmost precision year after year. The number of his years is unknown, but he never ages and no wrinkles mar the smoothness of his brow. You may say it is because this sentinel of the sky is lifeless and indifferent, and needs not to toil and work like human beings, but is this so? When his busy time comes he rises before most of us. He bestirs himself in the small hours of the summer morning while the world still sleeps, and so quietly that few are conscious of his appearance. For he has mapped out for himself a day's work, a thousandth part of which staggers one to think of. It is a programme giving what seems to us appalling figures with regard to time and distance, light and heat; yet each item in the list must be carried out to the last degree and minute and second before he can leave us to the care of another night. Slowly and grandly he mounts the sky, growing in might at each step for the accomplishment of his magnificent task. But no sooner is his power acquired than, with a liberal hand, he scatters it abroad over the whole land, and slumbering life becomes reanimated by the swelling floods of light and glowing heat poured down upon us. Thus, by degrees he reaches the zenith, and there, half his journey done, he stops to rest awhile, beaming down upon the world with the full radiance of his dazzling brightness! What a different scene to that which first met his gaze when he commenced his journey in the gloom of that early morning. All was still and dark. Now all is activity and light! Men then stilled in sleep are now rushing hither and thither; birds silently roosting are now singing and busy on the wing; flowers then closed and ensheathed in sombre sepals are now spread open, clothed in multi-coloured petals, and diffusing sweet perfumes all around; insects, too, that were dormant at dawn now fill the air with their merry hum. May we credit the sun with the power of thought, as he sits, high above in the heavens on that lovely summer mid-day pausing ere he commences to speed away on the last half of his journey towards the silvery west? If so, may we not attribute to him a feeling of satisfaction as he notes that all the activity, aye, and the very life he sees, is due to his agency; and yet how few of us human denizens of the busy world beneath give a thought to "Old Sol." It is only the flowers, the humblest forms of life, that dare to look him in the face; they alone with their heads upturned to him, are aware of the value of his presence. But men and women for the most part shade their eyes; some greet one another with some such meaningless expression as "Fine day, isn't it?" Others are already complaining of the heat, the only ungrateful creatures in all this happy world! "Ah," thinks the sun to himself, "if I were to disappear for one short hour, where would these 'lords of creation' be?"

Hot sunshine is what our bees revel in. If at times too hot within the hive, it never is so in the field. I often have a certain amount of satisfaction in the knowledge that I am located so far south, because of knowing that the sun's rays, both in summer and winter are warmer here than in the more northern counties of the kingdom. And yet the difference is very slight compared to that between this country and most of the bee-keeping countries abroad. A glance at a good map of the world will show this. The British Isles are well to the north of the best honey-producing parts of Europe. Comparing ourselves with America, the difference is much more marked. The most southerly point of England is nearer to the north pole than the northernmost of the United States.

The greater part of Britain is on the same parallel of latitude as barren Labrador and considerably further north than Newfoundland with its icebergs and fogs. In Asia we are on a level with frigid Kamschatka. It is not surprising that a leading American bee journal, commenting recently on Mr. Lancelot Quayle's record "take" of honey in the Isle of Man, says:—"This is a remarkable yield (334 lb.) from any source, to say nothing of a place situated six degrees, or about 400 miles, north of the northern boundary of the United States."*

The fact is that we are kept warm and bee-keeping made possible in this country by the Gulf Stream. Were it not for this we should have six months of snow and ice like the countries mentioned above; but the Gulf Stream cannot make the rays of the sun as hot as they are in countries situated to the south of us.

We also have *less* sunshine than most other bee-keeping countries, because the warm breezes from the Atlantic Ocean bring to our

* *Gleanings in Bee Culture*, Vol. XXVII., page 827.

shores a quantity of moisture in the form of clouds and mists which obscure the sun's rays, especially on our western coasts. Down here, in Kent, we flatter ourselves that we are better off in the duration of our sunshine than many parts of the country, but I am afraid that we must yield to many places further inland, where the summer sun is seen oftener and in a higher temperature than down here on the coast. Still, of all the sea-side resorts in the country, Ramsgate and Margate claim to have the largest amount of sunshine, but with how much truth I am unable to say.

Alas, the short winter's day, on which I write, is fast drawing to a close, and "Old Sol" has changed much since he induced me to take up my pen in his praise a little over an hour ago; he has already sunk behind yonder leafless trees, and will soon touch the horizon. Shorn of his flashing yellow rays, he has now acquired a reddish tinge which momentarily grows deeper. We must hasten to bid him farewell, for he has already commenced to slip down behind the hill. "Good bye, old friend, we do but express the wishes of every living thing slumbering in this land if we promise you a right hearty welcome when you come to climb our skies with your awakening beams next spring." . . . Our friend has vanished, but he has left a golden glow behind him which will linger long on into the dusk. As we watch this reflection grow fainter and fainter, and gradually give place to the increasing gloom and chill of night, a feeling of loneliness steals over us and we are impressed more than ever with a sense of utter dependance on the continued patronage of our departed friend, "Old Sol."—F. W. L. SLADEN, *Ripple Court, Dover, December* 16, 1899.

OLD-FASHIONED BEE-KEEPING.

[3864.] We have a bee-keeper living in our small town who still manages her bees in the old way. Her hives this year had such a very unique appearance that I photographed them. It was necessary to take them twice, because they were placed in two rows, at right angles to each other, one row facing west, and the other north; those facing west are supposed to be the stock hives, and some of them are placed, each on a flat stone, which forms the floor of the hive (for no separate floor-boards are used), and this is supported by two other flat stones placed a little distance from each other, on their edges, and firmly fixed in the ground. The rest of the hives are placed on old chairs in various stages of dilapidation. The hives are all of straw, most of them being of ancient date, and are covered with a great variety of objects by way of roof. Amongst these we see old earthenware pannings, too much broken to be of any possible domestic use, old bottomless metal coal-scuttles, supplemented by worn-out straw skeps, broken tiles, a box on edge, old sacks, old rusted-out and useless dripping-tins, pudding-pans, &c. Of course, a water-colour drawing would look much more effective than a photograph, because of bringing out local colour; moreover, the hives were

AN OLD-FASHIONED APIARY.

difficult to photograph, on account of the plant, weeds, &c., growing in front and between them, but I thought they deserved a record.

Bees appear to have been in the family for more than a century and a half, probably very much longer, and have passed down from generation to generation (curiously enough, on the female side), all living at Kirton-in-Lindsey. The great grandfather of the present bee-keeper was named Peter Webster. I cannot ascertain his exact age at death, but he must have been over eighty when he died, for I find that he was married on December 7, 1742, and was buried October 8, 1805, having thus had about sixty-three years of married life. He was a great bee-keeper, and kept as many as ninety-nine skeps of bees through the winter; he tried, but could not manage, to reach 100. At that time bee-keeping was a very important industry, and I have been told that honey merchants used to visit the district and buy the hives destined to be "taken up." A man of the name of John Blow—who married Peter Webster's daughter Jane on January 1, 1788—kept bees, and, no doubt, obtained them from his father-in-law, but whether at his death (which occurred seventeen years after) or on his marriage I am unable to say. However, he lived to be eighty-four years of age, and died in 1844 (thirty-nine years after his father-in-law). The usual number of hives he wintered was twenty-one. At his death the bees passed to his son-in-law, Wm. Codd, who was living with his wife in the same house with Blow at the time of his death. William Codd did not keep so many bees as his father-in-law, contenting himself with about eleven hives as his winter stock. He died in 1874, aged sixty-three years. His only daughter married John Booth, and this daughter is now a widow, and inherited her father's bees and other property on the death of the latter. She is the present bee-keeper, and, curiously enough, this autumn has given some of the bees to her son-in-law, who, however, does not reside at Kirton, and he will keep them on the frame-hive principle, as his father, who is a farmer, already does so.—C. F. GEORGE, *Kirton-in-Lindsey, Lincolnshire, December*, 1899.

NOTES FROM WYCHWOOD FOREST.

LACE-PAPER EDGING FOR SECTIONS.

[3865.] The specimen of lace-paper edging you illustrate on page 469 of B.J. for November 30 is, indeed, a most timely object lesson. It enables one to see that there are still folk in Old England who will "buy a pig in a poke," as the saying goes, for sections covered up in that fashion seem to say, "This is a faulty section, will not bear inspection, so must be hidden as much as possible."

Every honey-producer worth the name knows that such a width of edging as the one shown is a nuisance, and a hindrance to the ready sale of the section so decorated (?), and if that is what we are coming to, the sooner lace-paper edging of every kind is discarded for sale purposes the better for us all. But any reasonable man will at once see the folly of such a thing, and I have no doubt your illustration has given food for thought to many BEE JOURNAL readers.

On the other hand, the idea that lace-edging a section should be altogether banished from the show bench is, in my humble opinion, not for the best; for I think that not only should the quality be of the honey itself go towards securing a prize, but the clean, neat, marketable appearance and general "get up" should be, and no doubt is, considered by the judges. The reason for judges taking other things besides quality of honey into consideration when making awards seems to me quite plain, because, let the comb and honey be ever so nice, yet if the wood of the section is dirty and grimy, and looks as if the man who prepared them for use had just been cleaning out the kitchen flue, the exhibitor must suffer for his worse than want of care, sections got up in this fashion, or even if glazed and the edging put on carelessly, are not likely to sell readily, whereas good honey stored in clean presentable sections does not wait long for a buyer, as many of us who are B.J. readers well know.—JOHN KIBBLE, *Charlbury, December* 19.

ANOTHER "FIND" OF HONEY.

[3866] The enclosed cutting, from the *Ramsey Courier* of the 2nd inst., shows that even the trees in the Isle of Man are receptacles for honey.—PERCY W. BROOKE, *Sulby, Lezayre, Isle of Man, December* 16.

"Mr. Weale, of Messrs. Williams, Weale, & Co., timber merchants, who have purchased Glen Roy, Lonan, from Mr. H. E. Bishop, informs us of a remarkable find of honey. Whilst engaged in felling trees on Monday, one of Mr. Weale's men, in striking a tree with his axe, was greatly surprised to find that he had hit upon a nest of bees. Directly an opening was made, the bees began to issue forth, and the exodus continued for about two hours. When the nest could be approached, it was found to contain an immense quantity of honey, and although some was wasted, over 70 lb. weight of honey was secured.

WORK FOR WINTER NIGHTS.

[3867.] Phew! Cold outside, *rather!* Now for a toasting at a good fire! Nothing can be done to the bee appliances to-night. Can't it though? There is that straight-bladed honey knife; wish it had that useful curve at the point end like the "W. B. C." knife shown on page 232 of B.J. for June 15. How to get it? Well, let's see. *Items:* a good red fire, pail of cold water, piece of soft brick or stone, a thick piece of iron (a poker will do). Place the point of the knife in fire, heat to a "cherry

red" about four inches from point, then place between bars of grate and bend to required curvature (not too great, but as shown). Place in fire again, heat to "redness," and plunge into pail of water. Our knife is now very hard, so we must "temper" it. Brighten the blade with piece of brick, put iron or poker in fire, get same red hot. Lay poker on "hob," and then rest the knife upon it. After a few seconds the bright blade will assume a purple tinge, then dark straw-colour, fading to light straw-colour. When this is reached, plunge into cold water and our job is complete. The knife, of course, will require sharpening. The convenience will soon be apparent when uncapping, and we shall bless that half-hour's work at the fireside.

With regard to tits eating bees, I noticed a pair in my apiary a few days since and suspected them of designs upon my "abodes of sweetness." So I placed strips of brown paper covered with bird-lime on alighting boards. Result: caught 'em both in the act! —WILL HAMPTON, *Richmond, December* 20.

[While open to correction, we fear our correspondent has inadvertently reversed the order in which hard steel changes colour in the softening process. In our experience the bright steel, when laid upon a piece of red-hot iron, first assumes a pale straw colour, then a darker yellow, and finally the purple tint comes.—EDS.]

THE PROFITS OF BEE-KEEPING.

[3868.] A local paper gives an extract from *The Money Maker* which is somewhat misleading. According to the proverb, "a lie goes round the world while truth is putting his boots on," and in this way, no doubt, a lot of extravagantly stupid things about bee-keeping obtain currency.

The extract to which I have referred says: "A hive and bees are to be purchased for £1 2s. 6d., and at the end of the season 50 lb. of honey will be sold at 1s. per lb., leaving a profit of £1 7s. 6d. the first year." *The Money Maker* then goes on temptingly to observe, "In subsequent years the profit is still larger." Never a word is said to qualify these extravagant statements. Of course, we may grant that a profit of even more than 27s. 6d. may occasionally be obtained from one hive, but when nothing is said on the other side regarding management, favourable season, and a dozen other things required before any such result can be approached even, the whole treatment becomes entirely misleading. As for the 1s. per lb. for the honey, I leave your readers to smile over that. — J. KIBBLE, *Charlbury, December* 19.

BEE NOMENCLATURE.

HEATH BEES.

[3869] In accordance with your request, I enclose a few particulars regarding the specimens of wild bees sent by your correspondent "C. A. P." (3852, p. 492). Though common on dry heaths, it is a bee I never take here, and I should have liked to have kept a specimen or two for my collection if they had not been so mutilated, because they are in remarkably bright condition, and cannot, I think, have been on the wing more than an hour or two before they were taken.

The insects received are fine large specimens of the heath bee (*Colletes succinc'a*), two ♂ and three ♀, all in fresh bright condition, but, unfortunately, all more or less smashed. This species frequents the flowers of the common heath, and makes a nest in the ground. Co. Kerry, with its long coast line and mild winters, ought to produce some rarities among the wild bees, as does the west coast of France —F. W. L. SLADEN, *Ripple Court, near Dover.*

Queries and Replies.

[2316.] *Packing Bees for Transit.*—May I ask for your valuable help with reference to moving bees? The facts are these:—I am, unfortunately, compelled to leave my present residence (most likely next month), and hope to settle in the vicinity of Wrexham, Cheshire. I have five hives, all stocked; three are W.B.C. hives, with bees on eight frames at present, and the other two are ordinary single side hives, with bees on eight frames. What I wish you to advise me in is in the packing and carrying per rail from here to their next house, provided the furniture-van owners are willing to take them, and there is very little they will not carry. 1. This being so, do you consider it wise to send the bees in one of the vans, and would they receive enough fresh air even if furniture is also in the van? Or should I send them, or take them with me per passenger train, there being two or three changes of trains? Should I fill in the remainder of frames, and let the bees spread out, or should I secure what frames they are now on? I am afraid the jolting and knocking about they will receive on rail will injure them whilst in their partly dormant condition. 2. Do you consider 8d. per lb. for extracted honey good f r last year? Your esteemed advice will be very welcome in an early reply.—GEO. COPE, *December* 18.

REPLY.—1. If the packing can be done under your personal supervision, it would, no doubt, be safer to send the hives by van than by rail. In the former case, the bees will not only be in charge of your own people all the way, but, after packing, would never be disturbed again till received by yourself at the journey's end. So far as regards safe packing, the points needing attention are—(1) making the frames firm and rigid, so as to guard against moving during the journey; (2) giving sufficient air while keeping the bees from escaping; (3) securing the hive bodies safely

to floorboards; (4) providing a soft bed of hay, or other suitable material, to minimise the danger of mischief from jolting on the journey. For the rest, we may add that full instructions for carrying out the above precautions will be found on page 115 of "Guide Book."

REMARKABLE "FIND."

HONEYCOMB HUNDREDS OF YEARS OLD.

A BEE JOURNAL reader resident in Cambs. sends us a cutting from a recent issue of a local newspaper, which reads as follows:—

"There is in the possession of Mr. W. Drake, of Broad-street, Cambridge, a curiosity of great antiquity in the shape of a perfect honeycomb embedded in the centre of what was once an oak-tree, which, according to naturalists who have viewed it, is hundreds of years old; in fact, it is impossible to say what age the comb and tree may not be. The tree was raised on land in the occupation of Mr. Gale Cornell, of Brick-kiln Farm, Bottisham Lode. It had been known to be embedded in the fen land for a long period, and when 6 ft. of peat had been taken off the surface, it was decided that the tree, which is of the species known as bog-oak, should be raised. It was found to be no less than 100 ft. long, and the men were in the act of splitting the tree into logs when, in the centre of it, they came upon a honeycomb, which, with the oak, had been embedded in the peat. The comb was in a perfect state of preservation, and dotted about it and lying at the base of the aperture were bees. The entrance to the comb was a gigantic knot, and it is supposed that when the tree fell, the knot fell directly on the gault, thus making prisoners of the bees which were in the comb. In course of time the tree sank into the peat, where it remained until last Thursday. Mr. Drake was passing at the time of the recovery of the tree, and had the portion containing the comb conveyed to his house, where it can be seen."

LOCATING AN APIARY.

QUESTION.—Which is the better location for bees, one on low ground where it is moist and frosty in the spring, but sheltered, or one on high ground where it is more free from dampness and late frosts, but somewhat windy?

ANSWER.—If I could have my choice I would select neither. My choice would be midway on a moderate slope, say one inch to the foot, or thereabouts, which faced toward the south, or more preferably, the south-east. This would avoid the early spring frosts and the dampness of the low land, and, to a large extent, the high winds of the elevated position, which are almost sure to prevail. To be sure, a wind-break can be constructed around the apiary on the high ground, but according to my experience many bees are lost by being swept away on windy days upon rising above this enclosure into the cold blasts which blow above and about it, they being lured out by the calm and sunshine within. For this reason, if limited to one of the two extremes, I would select the low ground in preference to the high. If bees go out from the warmth caused by the midday sun shining on this low ground, they are not liable to be lost thereby; for when they rise high enough to strike the cold air from above, they at once fall into the warm air below, thus immediately warming again, so are not lost. Then, on the whole, the temperature at the low location will average much the warmer in early spring.

However, as I said at the start, if it were possible I should avoid the two extremes in locating, and take an intermediate one. But where our environments are fixed so that we cannot have our choice in such matters, happy is that man or woman who can make these environments the most nearly accord with what a good location would give us.

AUTUMN AND SPRING WEIGHT OF COLONIES.

QUESTION.—What becomes of the difference between fall and spring weight of colonies, something amounting to from 20 to 25 pounds?

ANSWER.—Bees use honey largely as fuel during the winter season, in order that they may not freeze during the frigid weather of our northern localities. I reason like this:

The natural food of the honey-bee contains the least possible amount of gross matter, and as bees do not take on fat and thereby increase in weight, the digestion of honey in the stomach of the bee is equivalent to combustion, or, in other words, the honey is burned up; hence, as the ashes of burned fuel do not weigh anywhere near as much as the fuel did before burning, so the "ashes," or what is left in the intestines of the bees, weigh much less than did the honey consumed to keep up the fire.

Again, much of the weight goes out by evaporation; and should the bees have a flight, more would go out by way of excrement, but not nearly as much by the latter as by the former. Honey being very free from nitrogenous matter, it is passed off in liquid or vaporous form by way of sensible and insensible perspiration and respiration, except the small amount to be found in the bodies of the bees. This is sometimes carried on to such an extent that water is seen running out at the entrance of hives in winter. Some of the food is also used in producing muscular force, and as this force is constantly wearing out, the loss is perceptible in the food, while in the weight of the bees it is not seen.

In all of the above we see the wisdom of Him who created the bees, for were it otherwise they could not stand the rigours of our Northern latitudes at all, inasmuch as they are too clean to soil their hives, while the weather will not admit of their leaving them, often for months in succession.—G. M. DOOLITTLE, *in American Bee Journal.*